# ANALYSIS OF GHANA'S RENEWABLE RESOURCE POLICIES

By

Troy Anthony ©

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# ABSTRACT

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Key Words: Renewable resources, policy analysis, Ghana, forest reserves, environmental degradation, bushfires, illegal logging, timber industry, collaborative forest management.

A comprehensive study of Ghana's renewable resource policies has been completed. The study is composed of two major components. First, an examination of environmental degradation occurring in Ghana along with the agents and underlying causes responsible. The examination led to the selection of renewable resource policies appropriate for analysis. Second, five policies pertaining to Ghana's renewable resources were analyzed based on their potential effectiveness in mitigating environmental degradation as well as how effectively the policies were being implemented in the field.

Commercial forestry operations are important to the Ghanaian economy. Illegal logging operations are a major factor in Ghana, consuming roughly two and a half times as much wood as the legal Annual Allowable Cut. Legal and illegal commercial operations place considerable stress on Ghana's forest resources; however that stress pales in comparison to those arising from Ghanaian's heavy dependence on fuelwood as an energy source and the damaging effects of bushfires. The diminution of the role of traditional authorities in overseeing forest reserves has weakened control and protection mechanisms, resulting in degradation and deforestation of many areas. The five policy documents examined are the Forest and Wildlife Policy of 1994, the Timber Resources Management Act and Amendments, The Control and Prevention of Bushfires Law, The National Land Policy, and the National Population Policy. Overall, Ghana's renewable resource policy is good; the weaknesses tend to arise with implementing strategies in the field. The difficulty in transforming ideas on papers to action in the field is often attributable to weak institutional capacity amongst Ghana's leading institutions and lack of political will. Recommendations are provided as to how to strengthen the protection of Ghana's renewable resources.

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Many of the ideas provided in the thesis were gathered through interviews carried out with a broad spectrum of people in Ghana. Interviewees ranged from subsistence farmers in Northern Ghana to senior officials within the Ministry of Lands and Forestry. Thank you for taking the time to meet with me to share your knowledge and suggestions; they form the backbone of the thesis.

Thanks to Carol Simpson and Ashley Spencely for keeping me organized and helping with my research in Ghana.

Finally, thanks to the Ghana-Canada *IN CONCERT* Program and CIDA for making the opportunity a reality.

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# INTRODUCTION

The way in which we exploit our renewable resources has changed quite dramatically over time. In the early days, when forests were seen as being in endless supply, we exploited them; little thought was given to management as there was always another stand of trees over the next hill. As the pressure placed on our renewable resources grew with our growing population, the notion was formed that population growth was the underlying cause of the degradation of our renewable resources. Today, many developing nations are experiencing rapid population growth rates which are often blamed for the degradation of the Earth's renewable resources. Rapid population growth rates in developing nations do place considerable stress on local renewable resources; however at the global level environmental degradation is attributable mainly to the substantial consumption rates in developed nations. Roughly ten percent of the global population lives in developed nations yet they are responsible for 90 percent of global consumption.

As the pressure placed on renewable resources continues to grow society is beginning to realize the importance of "sustainable resource management". Achieving sustainability is critical as it will enable us to continue using resources to produce products while ensuring the continuous provision of environmental services, essential to our survival and the survival of future generations. Renewable resource policies outline the strategies to be implemented in our quest for sustainable resource management.

## STATEMENT OF PROBLEM

Forests are extremely important to Ghanaians providing both essential environmental services and a large variety of products especially important to the large number of Ghanaians living as subsistence farmers in rural communities. Environmental degradation is damaging to Ghanaians as many people, especially those from rural areas, have low incomes making their subsistence heavily dependent on the soil to raise their crops and on the forests to provide a variety of wood and non-wood forest products (Anonymous 1992). Environmental degradation also affects people in urban areas; however the effects tend to take longer to reach them as their livelihoods are not directly dependent on the land. People living in rural areas can therefore be thought of as in the front line against environmental degradation.

Unfortunately, substantial deforestation and forest degradation is occurring in the country. While commercial logging operations play a role in deforestation, Ghanaians heavy dependence on fuelwood as the main energy source, the damaging effects of bushfires and shifting cultivation also have significant effects. The Government of Ghana is trying to control environmental degradation through the implementation of a variety of policies. These renewable resource policies are important as they outline strategies that, if successfully implemented, will positively influence the direction Ghana takes in managing its resources.

Policy is defined as "a definite course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions" (Merriam-Webster's 2002). While policies can be thought of as strategies developed to tackle certain issues, policy also involves a conscious choice leading to deliberate action, or inaction. That is to say a government can illustrate its policy by not taking any action at all (Brooks 1998).

When dealing with environmental degradation it is important to bear in mind two components contribute to degradation: agents and causes. Agents are physically responsible (proximate causes) for the degradation, while causes are the underlying factors creating conditions favorable to the agent component of the process (Naysmith 1999). The distinction is important as effective solutions to environmental degradation require solving the underlying causes instead of simply removing the agents.

## STUDY OBJECTIVES

The thesis has been undertaken to serve as an analysis of Ghana's renewable resource policies to ascertain how effective the policies will be in mitigating environmental degradation. The three principal objectives of the study involve:

1) examining the agents and underlying causes of the most pressing forms of environmental degradation occurring in Ghana;

2) determining how effective Ghana has been in creating and implementing policies to minimize environmental degradation; and
3) to provide suggestions to strengthen Ghana's renewable resource policies.

## INTENDED USE OF RESULTS

The importance of minimizing environmental degradation to provide Ghanaians an improved quality of life is well understood in Ghana. This study has been undertaken with the intention of providing Ghanaian decision and policy makers with an impartial view of the effectiveness of their policies, and allowing for an understanding of how policies can be strengthened to improve their ability for maintaining the health and integrity of Ghana's renewable resources.

# LITERATURE REVIEW

The literature review provides background information on Ghana setting the stage for the rest of the thesis. More specifically this literature review provides an overview of Ghana's: location and history, demographics, economy, climate, soil conditions, ecological zones, forest management in Ghana, and Ghana's forest industry.

## LOCATION AND HISTORY

Ghana is located in West Africa on the Gulf of Guinea, a few degrees north of the equator, at latitude 5°36′ N and longitude O°10′ E. Ghana encompasses a total area of 238,540 $km^2$ with a land area of 230,020 $km^2$ (Ghana Home Page 2002). Ghana is surrounded by the Côte d'Ivoire (Ivory Coast) to the West, Burkina Faso to the North, and Togo to the East.

The first sub-Saharan country to gain its independence, The Republic of Ghana is currently governed by a constitutional democracy with an elected president. Since gaining independence in 1957 Ghana has come a long way, today it is considered a leader amongst West African nations. Ghana's evolution to its current state was not an easy route with several government changes orchestrated through military coups (The Republic of Ghana 2001-2002).

Ghana compares favorably to the other African nations in terms of political stability. Ethnic conflicts are rare and tend to be localized. The Government of Ghana has proven its ability to deal with conflicts in a rapid and even-handed manner (CIDA 1999). During two trips to Ghana, once during the summer of 1999 while Ghana was under the Presidency of Flight Lieutenant J.J. Rawlings and again during the summer of 2002 during President John A. Kufuor's second year in office, the author experienced first hand the country's stability; feeling as safe in Ghana as in his Canadian homeland, a country known world-wide for its political stability.

Administratively, Ghana is divided into ten regions (Fig. 1) each with its own regional capital. Regions are composed of districts, of which 110 exist in Ghana. Each district has a district assembly; the main decision making body of the local government. District assemblies comprise some elected officials and others nominated from towns and villages within the district. District assemblies have the capacity to create and pass local by-laws (Kotey *et al.* 1998). District assemblies form the local government however the pre-colonial governing system of traditional councils is still in place. Traditional councils are made up of a number of stool chiefs surrounding a paramount chief (Kotey *et al.* 1998).

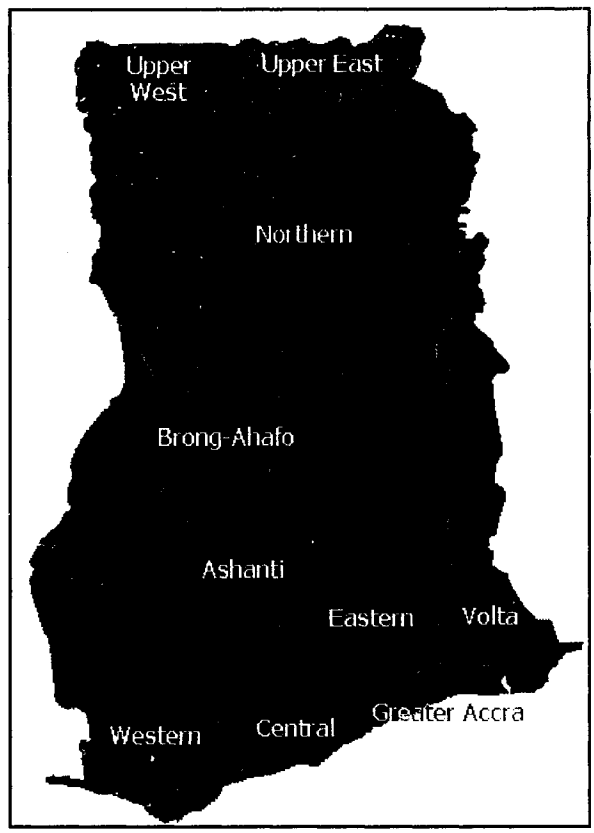


**Figure 1. The Ten Administrative Regions of Ghana (Ghana Home Page 2002).**

## DEMOGRAPHICS

The 2000 Population and Housing Census placed the Ghanaian population at 18,912,079 persons. Using this population level and the previous population census of 1984 the period had an annual population growth rate of 2.7 percent. This rate is lower than the West African annual average of 2.9 percent (Ghana Statistical Service 2002). While the population growth rate provided by the Ghana Statistical Service is likely fairly accurate, it appears to have omitted the migration of people from the country. The

actual population growth rate over the period would therefore be somewhat higher than the suggested 2.7 percent. The fertility rate (*i.e.*, the total number of children a woman is likely to have) has been decreasing steadily since the early 1990s and is currently estimated at 4.5 children per woman, which is lower than the average sub-Saharan fertility rate of 5.8 (Ghana Statistical Service 2002).

Nationally, the population density is 79.3 persons per square kilometre. The population remains predominantly rural in all regions other than the Greater Accra and Ashanti regions. Over forty percent (41.3%) of the population is under the age of fifteen. The proportion of elderly people (*i.e.*, over sixty-four years of age) is a mere 5.3 percent. Females account for just over half of the total population, at 50.5 percent (Ghana Statistical Service 2002).

Religion is a very important aspect of the lives of most Ghanaians. The breakdown of religious affiliation is 68.8 percent Christian, 15.9 percent Muslim, and 8.5 percent following traditional religions. Just over six percent of Ghanaians report not to be affiliated with any religion (Ghana Statistical Service 2002).

Nearly half (46.9%) of the population is literate. Illiteracy rates tend to be higher in the northern regions and lower in the south. A higher proportion of females are illiterate compared to males. Educational attainment is low with 43.4 percent of the population receiving an education of not more than three years. Just over eighteen (18.6) percent of the population completes primary school, with a mere 2.8 percent

continuing on to university. Males continue to have a greater likelihood of attending school than females (Ghana Statistical Service 2002).

Poverty – defined as surviving on an income less than two-thirds of the national average – is a major challenge in Ghana with 36 percent of Ghanaians living in poverty. Of the 36 percent living in poverty, seven percent live in hard-core poverty. Hard-core poverty is defined as people living on less than one-third of the average annual income. Eighty percent of all impoverished Ghanaians live in rural areas, where underemployment is a common problem (Rawlings 1995). Poverty levels in Ghana follow a gradient; with the occurrence and severity of poverty increasing from the southwest to the northeast part of the country. The poverty gradient is similar to the nation's moisture gradient which runs in the same direction with decreasing levels of precipitation occurring towards the northeast.

HIV/AIDS is a very common problem in many African nations. The World Health Organization of the United Nations estimates the adult HIV/AIDS infection rate in Ghana to be 3.0 percent. An estimated 360,000 people in Ghana are believed to be infected with HIV/AIDS and in 2001 an estimated 28,000 deaths were attributable to HIV/AIDS (World Health Organization 2003). While these numbers are substantial, they are much lower than the infection levels experienced in other African nations (Table 1). Ghana's infection rate is roughly half that of neighboring Burkina Faso, Togo and Nigeria; and a third of the infection rate of Côte d'Ivoire.

**Table 1. HIV/AIDS information (World Health Organization 2003).**

| Country | Adult Infection Rate (%) | Number of People Infected | Attributable Deaths in 2001 |
|---|---|---|---|
| Ghana | 3.0 | 360,000 | 28,000 |
| Côte d'Ivoire | 9.7 | 770,000 | 75,000 |
| Burkina Faso | 6.5 | 440,000 | 44,000 |
| Togo | 6.0 | 150,000 | 12,000 |
| Nigeria | 5.8 | 3,500,000 | 170,000 |
| South Africa | 20.1 | 5,000,000 | 360,000 |

## ECONOMY

Agriculture (which encompasses forestry) is the largest employer, employing nearly half (49.2%) of Ghanaians, followed by: production and transport work (15.6%), sales work (14.2%), and professional and technical work (8.9%). The public sector employs 5.9 percent of the total working population. The private sector employs 91.9 percent of the total working population. Nearly two-thirds (65.7%) of the economically active population are self-employed without employees. A substantial proportion of the population (14.7%) is un-paid family workers and apprentices in the informal sector. Of the total working population only 19.6 percent could be taxed on their incomes (Ghana Statistical Service 2002).

The Ghanaian economy has been plagued by high inflation rates and a massive decline in the value of Ghanaian currency. The exchange rate is currently 8450 Cedis – the Ghanaian currency – to one American Dollar (XE.com 2002). Ten years ago, in 1993, the exchange rate was 780 Cedis to one American Dollar (U.S. Department of Commerce 2003).

In the past decade the agricultural sector has seen an average growth rate of 1.8 percent per year. During the same period the population growth rate was roughly double the growth rate experienced by the agricultural sector; suggesting if the trend continues, Ghana will be unable to produce enough food to feed its growing population (Rawlings 1995). Ghana's heavy reliance on agriculture (responsible for 40 percent of Ghana's gross domestic product (GDP)) and the sectors low growth rate plays a significant role in constricting the nation's economic growth (Rawlings 1995).

## CLIMATE

Being so near to the equator Ghana does not experience the same seasonal fluctuations as countries further from the equator. Seasonal variation does exist however between Ghana's two major seasons: the rainy and dry season. While the seasons vary slightly between Ghana's different zones, the rainy season runs roughly eight months from April to November and the dry season runs the remaining four months from December to March (Ghana Home Page 2003). Ghana can be thought of as having a climatic gradient with conditions becoming warmer and drier from the southern part of the country to the north. Climatic conditions therefore vary between Ghana's Forest Zone (to the south) and Interior Savannah Zone (to the north). Figures 2 and 3 illustrate monthly temperatures and precipitation rates typical of the Forest Zone (values from the Kumasi meteorological station). Precipitation rates range from a minimum of roughly 18 mm per month in January (during the dry season) to a maximum of 210 mm per

month in June (FAO/ARTEMIS 2003). Mean monthly temperatures range from a minimum of 24.5 degrees Celsius in August (during the rainy season) to a peak of 27.5 degrees Celsius in February (during the dry season).

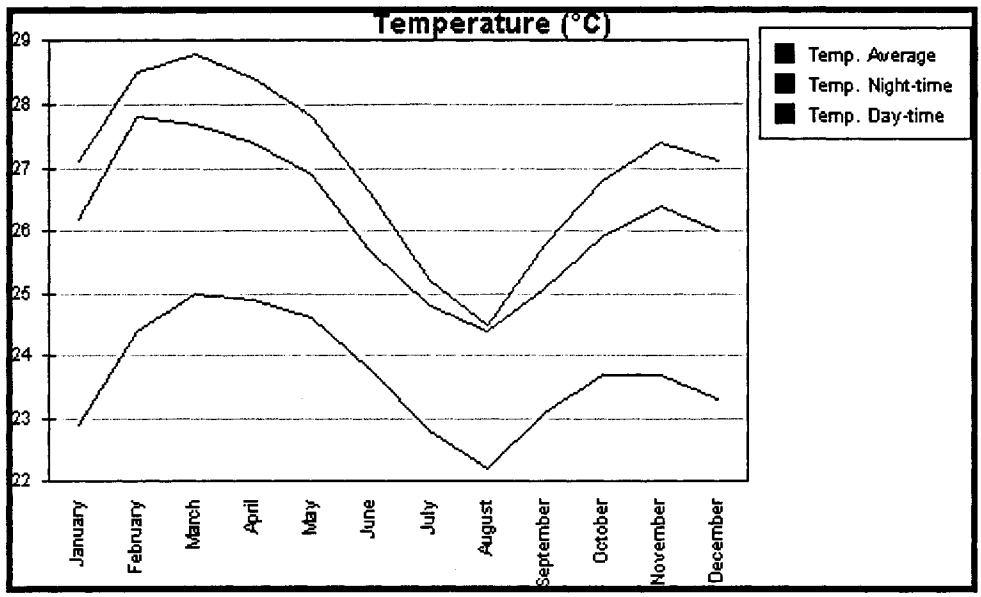


**Figure 2. Monthly temperatures typical of the Forest Zone (FAO 2003).**

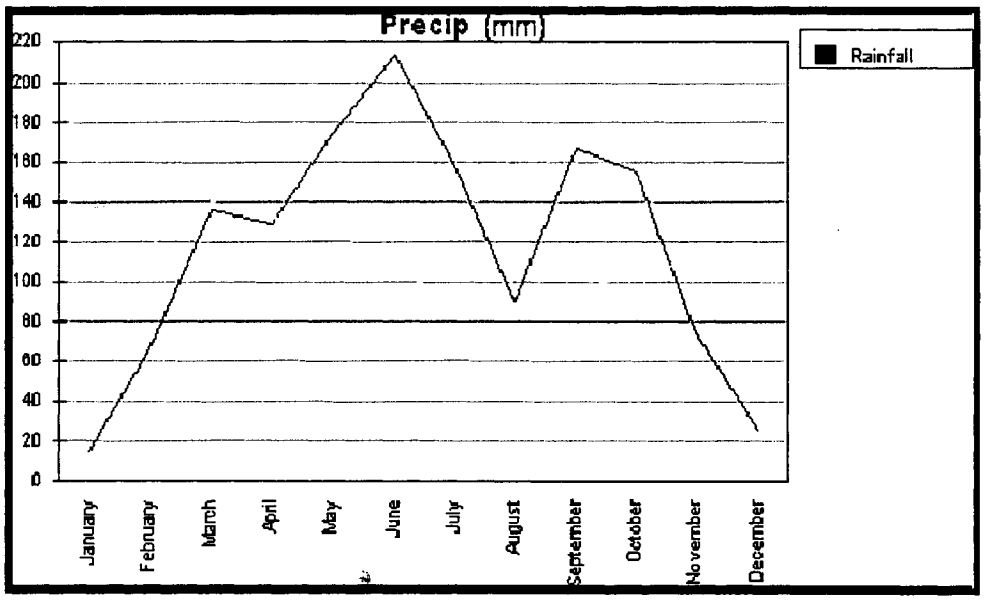


**Figure 3. Monthly precipitation levels typical of the Forest Zone (FAO 2003).**

Figures 4 and 5 illustrate monthly temperatures and precipitation rates typical of the interior savannah zone (values from the Wa meteorological station). Precipitation levels range from a low of less than 10 mm per month in the dry season to a maximum of roughly 195 mm per month in the rainy season. Average daily temperatures are lowest in August (during the rainy season) at 25 degrees Celsius. Average daily temperatures peak during the dry season in March at 30 degrees Celsius (FAO/ARTEMIS 2003).

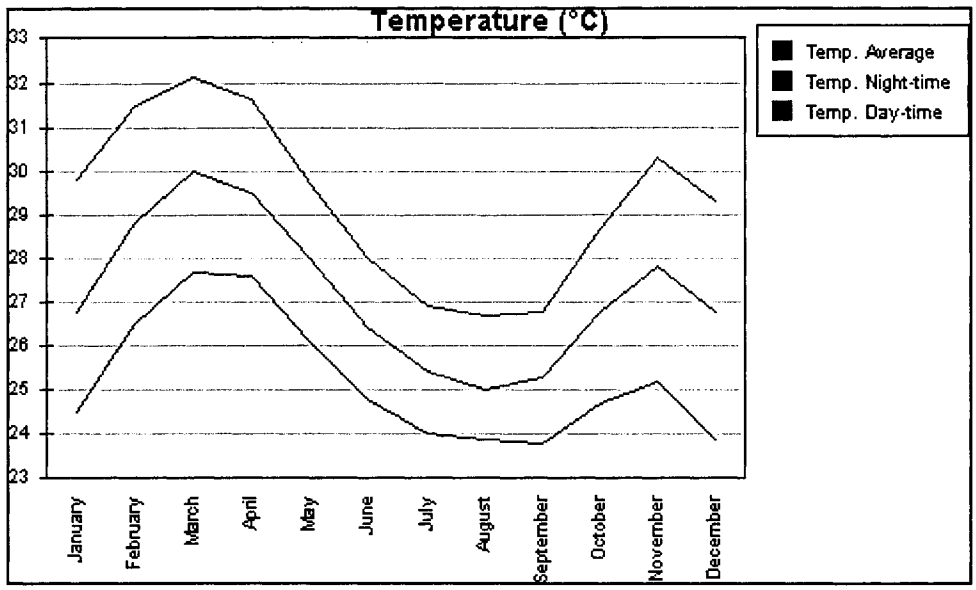


**Figure 4. Monthly temperature typical of the Interior Savannah region (FAO 2003).**

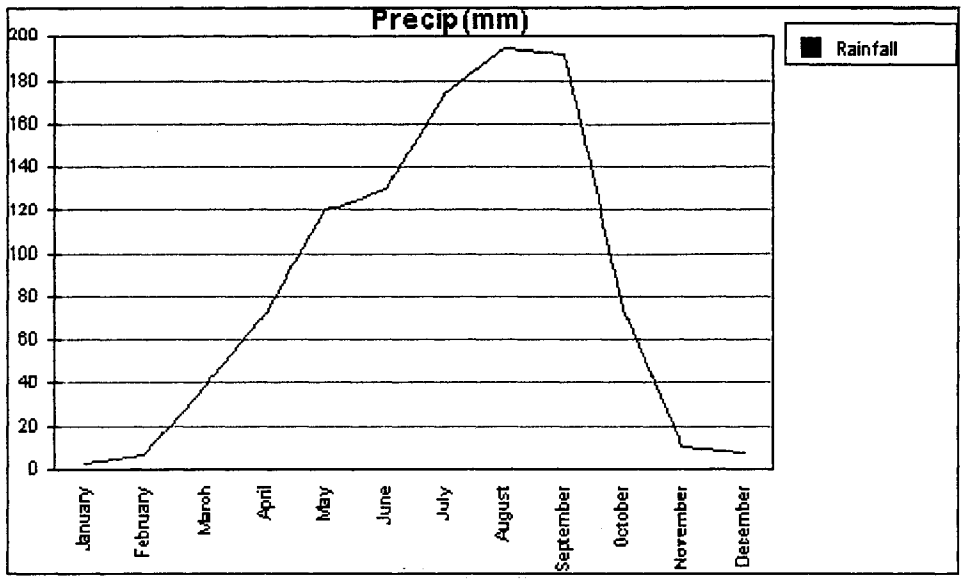


**Figure 5. Monthly precipitation levels typical of the Interior Savannah region (FAO 2003).**

## SOIL CONDITIONS

While soil is important to all humans, as it provides for our existence, maintaining soil quality may be even more important in developing countries as low incomes inhibit farmers from using inputs such as commercial fertilizer to maintain productivity. Any process which degrades the soil will therefore have a major effect on farmers.

A large portion of Africans survive as subsistence farmers; people who try to grow enough food to feed themselves and their families. Any production, in excess of that required to feed the family is usually sold in the marketplace providing a small

family income. A major obstacle faced by African farmers is soil quality. Eswaran *et al.* (1997) indicate that 55 percent of the land area on the African continent has been deemed unsuitable for any type of agricultural practices, other than nomadic grazing, yet 30 percent of all Africans try to survive as farmers on these unsuitable lands (Table 2).

Table 2. Percentage of Africa's population by soil quality and land area. (Eswaran *et al.* 1997).

| | Percentage of Africa's | |
|---|---|---|
| Soil Quality | Land Area | Population |
| High | 16 | 31 |
| Medium | 13 | 16 |
| Low | 16 | 23 |
| Unsustainable | 55 | 30 |

While nomadic grazing is deemed suitable on some of the lands deemed unsuitable for agricultural purposes, this type of grazing is often detrimental to the land. Nutritious grasses are quickly grazed leaving less palatable plants, leading to increased wind caused soil erosion and decreased biological productivity, resulting in an overall decrease in soil quality (Brady and Weil 1999). Nutrient studies of farm land in sub-Saharan Africa indicate an overall net loss of soil nutrients.

Most tropical soils have developed from deeply weathered parent materials and as a result tend to have low cation exchange capacities. Few nutrients are available to plants and any nutrients present in the soil profile are susceptible to nutrient leaching due to the intense precipitation rates in the region (National Academy of Sciences 1972).

While the amount and rate of precipitation cannot be easily controlled, the cation exchange capacity can be manipulated to some extent through the addition and incorporation of wastes, or other forms of organic matter (OM) into the soil profile. The addition of OM increases the number of negative sites within the soil; therefore increasing the soil's potential to hold nutrients (Brady and Weil 1999).

The majority of nutrients in tropical ecosystems is generally held within the vegetation itself (Kimmins 1997). That is why cut and burn practices, used for land preparation in agriculture, can be so detrimental to tropical soils. Burning the vegetation quickly releases nutrients to soils with characteristically low cation exchange capabilities, making the nutrients prone to leaching.

Due to remarkably different climatic conditions between temperate and tropical regions one is likely to assume soil processes would also differ. While minor differences exist, the major soil forming processes such as chemical and physical weathering are quite similar. The major difference is in the rates at which the processes occur (Young 1976). Water is one of the principal soil process agents involved in bringing about changes in soil properties. The water temperature affects the rate at which chemical weathering processes occur. Van't Hoff's Generalization states that with each increase in temperature of ten degrees Celsius, the rate of a chemical reaction increases by two to three times. Soil temperatures can be examined to estimate how much quicker chemical reactions occur in tropical regions (Young 1976).

World maps of mean annual soil temperatures (Chang 1957) suggest tropical soils are generally in the range of 25-30 degrees Celsius, while the mean temperature of temperate soils is ten degrees Celsius. Applying Van't Hoff's Generalization to difference in mean annual temperatures between the two regions suggests chemical reactions occur three to six times faster in tropical regions than temperate regions. Higher temperatures result in greater rates of chemical weathering and leaching in the tropics than temperate regions (Young 1976).

While most soil processes in tropical regions are similar to those in temperate areas, laterization is a soil process unique to tropical soils. Laterization involves both chemical and physical processes. The chemical aspect of the process involves the accumulation of Iron (Fe) and Aluminum (Al) in a subsoil layer; this layer is referred to as a laterite layer. The physical component of the process entails the removal of soil layers (as a result of natural or human caused erosion) until the laterite layer is exposed to air (Buck *et al.* 1999). The laterite layer hardens on exposure to air and heat and is unlikely to soften, even when precipitation occurs. The hardened layer is suitably named ironstone (Bradey and Weil 1999). Laterization is very detrimental to agriculture and forestry as the hardened layer inhibits root penetration of agricultural crops and trees, and inhibits cultivation.

The majority of the soils present in Ghana are slightly acidic with pH's ranging from 5.5 to 6.5. Moderately acidic and highly acidic soils are also present in Ghana (U.S. Department of Agriculture 1996). Acidic soils have different chemical, physical, and biological characteristics than less acidic soils and have a major effect on plant

growth (Brady and Weil 1999). Acidic soils have relatively low cation exchange capacities, subsequently decreasing the soil's ability to support plant growth and development. The roots of plants will not develop as well in acidic soils as they would in normal soils. Poor plant growth is often attributed to the toxic effects of Aluminum (Al) and Magnesium (Mn) in the soil. Different crops have varying levels of tolerance to acidic soils. Tomatoes, for example, tend to be intolerant to acidic soils while corn is more tolerant (National Academy of Sciences 1972).

## ECOLOGICAL ZONES

Ghana can be divided (Fig. 6) into six ecological zones: Sudan Savannah, Guinea Savannah, Forest Savannah Transition, Semi-Deciduous Rainforest, High Rainforest, and the Coastal Savannah (Centre for Pest Information Technology and Transfer 2002). For the purpose of this study the six ecological zones will be grouped into three major ecological zones: the Forest Zone (comprising the High Rainforest Zone, the Semi-Deciduous Zone, and the Forest Savannah Transition), the Coastal Savannah Zone (comprising the Coastal Savannah), and the Interior Savannah (comprising the Sudan Savannah and the Guinea Savannah). Table 3 provides an overview of the size of Ghana's ecological zones. The estimated area of closed forest is also provided for the Forest Zone. A closed forest area is not provided for the savannah zones as trees tend not to occur as closed forest canopies, rather they are scattered across the landscape.

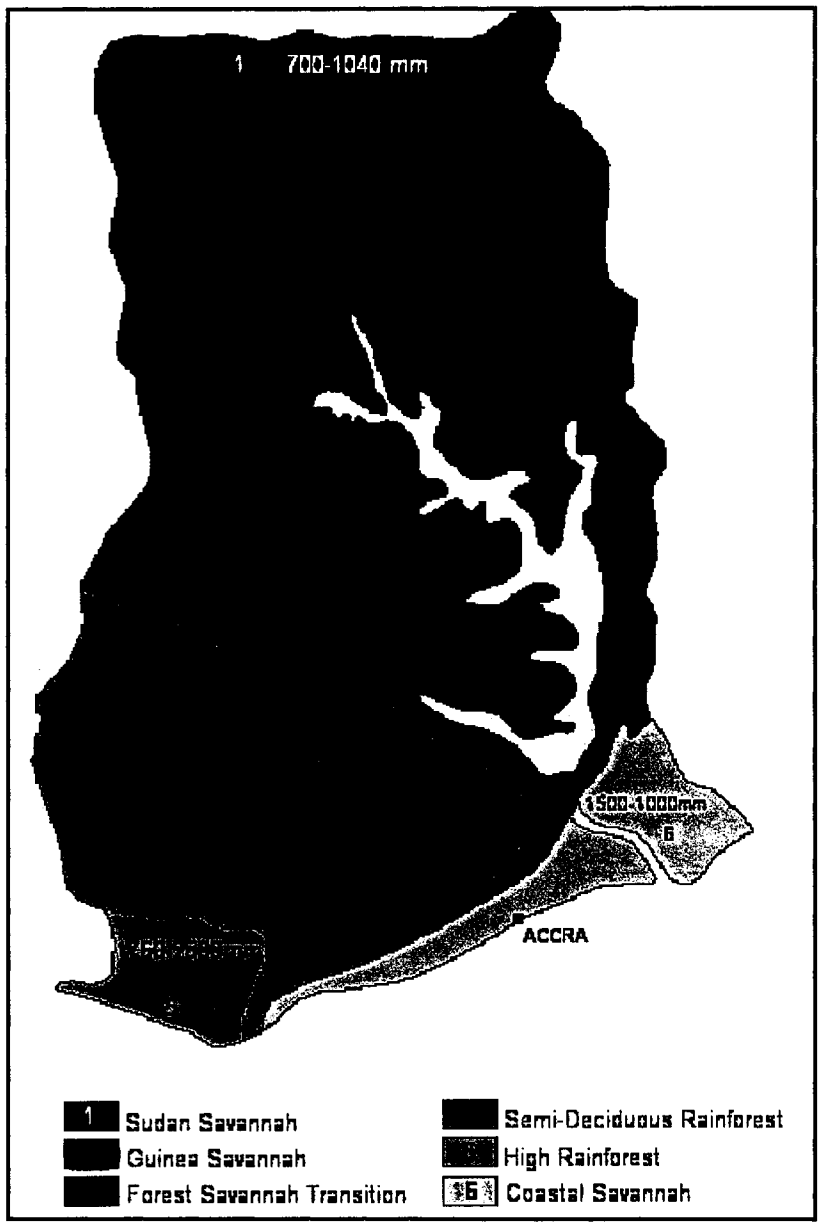


**Figure 6. Ecological zones of Ghana and associated annual rainfall (modified from: Centre for Pest Information Technology and Transfer 2002.**

**Table 3. Overview of Ghana's ecological zones (Inkoom 1999).**

| Ecological Zone | Area (ha) | Percent of Ghana's Total land mass | Closed Forest Area (ha) |
|---|---|---|---|
| Forest Zone | $8.3 \times 10^6$ | 34 | $1.6 \times 10^6$ |
| Coastal Savannah Zone | $1.2 \times 10^6$ | 5 | – |
| Interior Savannah Zone | $14.6 \times 10^6$ | 61 | – |

The Forest Zone

The Forest Zone covers 8.3 million hectares, approximately 34 percent of the country's land base, in the southwestern region of the country (Inkoom 1999). Annual precipitation levels range from 2800 mm in the southwest to 1300 mm in the northern part of the zone (Centre for Pest Information Technology and Transfer 2002). The Forest Zone is very diverse; containing approximately 730 different tree species and more than 2100 plant species (Kotey *et al.* 1998). Trees in the Forest Zone grow very rapidly, with certain species able to attain more than 30 centimetres in diameter at breast height (dbh) and 20 metres in height after three to four years growth (Hawthorne 1993).

The Coastal Savannah Zone

The Coastal Savannah Zone, located on the coast in the southeastern part of the country, covers 1.2 million hectares, approximately five percent of the total land area. Annual precipitation levels range from 1000 mm to 1500 mm. Soils in this zone vary

from heavy clays in the Accra plains to light sands in the Volta delta (Inkoom 1999). Trees grow in the Coastal Savannah Zone; they are much smaller however and are found in much lower densities than those in the Forest Zone.

The Interior Savannah Zone

The Interior Savannah Zone covers the northern part of the country, accounting for 14.6 million hectares (approximately 60% of the country's total land area). Annual precipitation ranges from 700 to 1250 mm and decreases towards the northeast. Rainfall can be erratic and can reach intensities of up to 200 mm of rain per hour (Inkoom 1999). Tree coverage in the Interior Savannah Zone is similar to that of the Coastal Savannah Zone; trees are smaller and occur at lower densities than the Forest Zone.

## FOREST MANAGEMENT IN GHANA

Forest management is the responsibility of the Forestry Commission (FC). The relatively new FC (created by Act 571 in 1999) is an implementing agency under the Ministry of Lands and Forestry "responsible for the regulation of utilization of forest and wildlife resources, the conservation and management of those resources and the coordination of policies related to them" (Forestry Commission 2001). The Forestry

Commission is composed of four subsidiary divisions: Forest Services Division (FSD), Wildlife Division, Timber Export Development Division, and Forest Product Inspection Division. While all four divisions of the FC contribute to managing Ghana's forest and wildlife resources, the FSD is responsible for managing commercial forestry operations in Ghana. Commercial logging operations occur only in Ghana's Forest Zone.

## Land Ownership

An important factor pertaining to forest management in Ghana is that forest resources managed by the FSD are normally located on privately owned lands (*i.e.*, lands not owned by the government). Ninety percent of Ghana's land base is privately owned – the remaining ten percent is state owned public land (Inkoom *et al.* 1999). In general these private lands are not owned by individuals; rather they are communal, the ownership resting with local communities. A community's land (referred to as stool lands in southern Ghana and skin lands in northern Ghana[1]) is managed by a custodian (generally a chief or head of a family) on behalf of the community.

Any decisions made by the custodian that affect rights and or interests in the land are generally carried out in consultation with the principal elders of the community (Larbi et al. 1998).

[1] The term stool and skin lands is attributable to traditional symbolism in Ghana, in which chiefs in southern Ghana sit on a stool while chiefs in northern Ghana tend to sit on the skins of animals.

Commercial Species

As previously discussed, forests in the Forest Zone have high levels of biodiversity with over 730 different tree species and 2100 plant species identified. The main commercial tree species are presented in Table 4. The 'Star Class' designation is set by the FSD and refers to the level of over-cutting or under-cutting of the species. Scarlet species are being felled at more 200 percent or greater levels than the level deemed sustainable. Red species are being felled at levels between 150 to 199 percent greater than deemed sustainable. The pink star class represents species that are being underexploited with harvest levels 50 percent below the AAC. Scarlet species marked with an asterisk are regarded as Restricted Timber Species and as such are not allowed to be harvested without the permission of the Chief Forest Officer (Ghana Forest Service 1998).

In addition to the Scarlet, Red, and Pink Star Species there is also a Black Star Species Designation. Black Star Species are described in Ghana's Logging Manual as species known to be of "high international interest and now only occurring in Ghana" (Ghana Forest Service 1998). Black Star Species are not to be felled under any circumstances and during stocking surveys these species are to be marked on maps and a 100 metre buffer zone is to be established around them. Black Star Species (trees, shrubs, and climbers) are presented in Table 5.

**Table 4. Ghana's main commercial tree species (Ghana Forest Service 1998).**

| LATIN NAME | COMMON NAME | STAR CLASS |
|---|---|---|
| *Afzelia Africana* | PAPAO | RED |
| *Albizia adianthifolia* | ALBIZIA | PINK |
| *Alibizia ferruginea* | ALBIZIA | SCARLET |
| *Albizia zygia* | ALBIZIA | PINK |
| *Alstonia boonei* | SINURO | PINK |
| *Amphimas pterocarpoides* | YAYA | PINK |
| *Aningeria species* | ASAMFENA | SCARLET |
| *Anopyxis klaineana* | KOKOTE | PINK |
| *Antiaris toxicaria* | KYEN-KYEN | RED |
| *Antrocaryon micraster* | APROKUMA | RED |
| *Berlinia species* | BERLINIA | PINK |
| *Canarium schweinfurthii* | CANARIUM | RED |
| *Ceiba petandra* | CEIBA | RED |
| *Celtis mildbraedii* | CELTIS | PINK |
| *Celtis zenkeri* | CELTIS | PINK |
| *Chrysophyllum albidum* | AKASAA | RED |
| *Chrysophyllum subnudum* | ADASEMA | RED |
| *Copaifera salikounda* | ENTENDUA | |
| *Cordia millenii* | TWENEBOA | |
| *Cordia platythyrsa* | TWENEBOABERE | |
| *Corynanthe pachyceras* | | PINK |
| *Cylicodiscus gabunensis* | DENYA | PINK |
| *Cynometra ananta* | ANANTA | PINK |
| *Daniellia species* | SOPI | SCARLET |
| *Dialium aubrevillei* | DUABANKYE | PINK |
| *Diospyros sanza-minika* | SANZA-MULIKA | |
| *Distemonanthus benthamian* | BONSAMDUA | RED |
| *Entandophragma angolense* | EDINAM | SCARLET* |
| *Entandophragma cylindricum* | SAPELE | SCARLET* |
| *Entandophragma utilie* | UTILE | SCARLET* |
| *Entandophragma candollei* | CANDOLLEI | SCARLET* |
| *Erythrophleum species* | POTRODOM | PINK |
| *Funtumia africana* | FUNTUM | |
| *Gilbertiodendron limba* | TETEKON | |
| *Guarea cadrata* | GUAREA | RED |
| *Guarea thompsonii* | KWADWUMA | RED |
| *Guiborthia ehie* | ANOKYE-HYEDUA | SCARLET* |
| *Heretiera utilis* | NYIANGON | RED |
| *Holoptelea* | ONAKWA | PINK |
| *Khaya anthotheca* | MAHOGANY | SCARLET* |
| *Khaya grandifoliola* | MAHOGANY | SCARLET* |
| *Khaya ivorensis* | MAHOGANY | SCARLET* |
| *Klainedoxa gabonensis* | KROMA | PINK |
| *Lannea welwitschii* | KUMNINI | PINK |
| *Lophira alata* | KAKU | RED |
| *Lovoa trichilioides* | WALNUT | RED |
| *Mammea africana* | BOMPAGYA | PINK |
| *Mansonia altissima* | MANSONIA | RED |
| *Milicia excelsa/regia* | ODUM | SCARLET* |
| *Milletia* | MILLETIA | |
| *Morus mesozygia* | WONTON | PINK |
| *Nauclea diderrichii* | KUSIA | SCARLET* |

| | | |
|---|---|---|
| *Nesogordonia papaverifera* | DANTA | PINK |
| *Ongokea gore* | ONGOKEA | PINK |
| *Pariniari excelsa* | AFAM | PINK |
| *Parkia bicolor* | ASOMA | PINK |
| *Pericopsis elata* | AFROMOSIA | SCARLET* |
| *Petersianthus macrocarpus* | ESIA | PINK |
| *Piptadeniastrum africanum* | DAHOMA | RED |
| *Pterygota macrocarpa* | KYERE | SCARLET |
| *Pycanthus angloensis* | OTIE | PINK |
| *Rhodognaphalon brevicupse* | BOMBAX | RED |
| *Rhodognaphalon* | | PINK |
| *Ricinodenron heudelotii* | WAWA | PINK |
| *Scottellia klaineana* | TIABUTUO | |
| *Sterculia oblonga* | STERCULIA | |
| *Sterculia rhinopetala* | WAWABIMA | PINK |
| *Sterculia tragacantha* | SOFO | |
| *Strombosia glaucescens* | AFENA | PINK |
| *Terminalia ivorensis* | EMIRE | SCARLET |
| *Terminalia superba* | OFRAM | RED |
| *Tieghemella heckelii* | MAKORE | SCARLET* |
| *Trichilia tessmanni* | TRICHILIA | PINK |
| *Trilepisium madagascarien* | | PINK |
| *Triplochiton scleroxylon* | WAWA | SCARLET |
| *Turraeanthus africanus* | AVODIRE | PINK |
| *Zanthoxylum species* | OYAA | |

**Table 5. Black Star Species (Ghana Forest Service 1998).**

| LATIN NAME | VEGETATION TYPE |
|---|---|
| *Afrostyrax lepidophyllus* | tree |
| *Albertisia cuneata* | climber |
| *Alsodeiopsis chippii* | shrub |
| *Asplenium schnellii* | herb |
| *Aubregrinia taiensis* | tree |
| *Bonamia vignei* | climber |
| *Bowringia discolor* | climber |
| *Ceropegia gemmifera* | climber |
| *Chrysoph. Azaguieanum* | tree |
| *Chytranthus verecundus* | shrub |
| *Coffea togoensis* | tree |
| *Cola umbratilis* | tree |
| *Commiphora dalzielii* | tree |
| *Croton aubrevillei* | tree |
| *Cyphostemma ornatum* | climber |
| *Dactyladenia hirstua* | tree |
| *Dalbergia setifera* | tree |
| *Dasylepis assinensis* | tree |
| *Deinbollia saligna* | shrub |
| *Dissotis entii* | tree |
| *Eugenia coronata* | shrub |
| *Gibertiod bilineatum* | tree |
| *Grewia megalocarpa* | climber |
| *Hippocratea vignei* | climber |
| *Hunteria ghanensis* | tree |
| *Hymenostegia gracilipes* | tree |
| *Leucaniodiscus punctatus* | tree |
| *Leptoderris miegei* | climber |
| *Monocyclanthus vignei* | tree |
| *Neoleonnieria clitana* | tree |
| *Nephthytis swanei* | herb |
| *Oleandra eiurana* | herb |
| *Pierreodendron kerstingii* | tree |
| *Placodiscus bancoensis* | tree |
| *Pseudagrostistachys africana* | tree |
| *Psychotria aff. Calceata* | shrub |
| *Psychotria ankasensis* | shrub |
| *Psychotria brachyanthoides* | shrub |
| *Psychotria dorotheae* | shrub |
| *Psychotria longituba* | shrub |
| *Psychotria subglabra* | shrub |
| *Pteleopsis habeensis* | tree |
| *Sapium aubrevillei* | tree |
| *Sclerosperma mannii* | herb |
| *Synsepalum aubrevillei* | tree |
| *Talbotiella gentii* | tree |
| *Tapura ivorensis* | tree |
| *Trichoscypha chevalieri* | tree |
| *Turraea ghanensis* | shrub |
| *Vernonia andohii* | climber |
| *Elytraria ivorensis* | shrub |
| *Ruellia togoensis* | shrub |

Commercial logging activities occur only in the Forest Zone. From a management point of view two types of forests exist in the Forest Zone: forest reserves and off-reserve areas.

Forest Reserves

Forest reserves are managed by the Forest Services Division primarily for commercial forestry purposes. Forest reserves cover 1.72 million hectares of the Forest Zone, approximately 21 percent of the Zone's total area. Of the 1.72 million hectares of forest reserves less than half (roughly 47 percent, or 800,000 hectares) are used for timber production, 22 percent are under permanent protection for biological reasons, and approximately 31 percent have low levels of stocking and therefore provide little to no potential for timber exploitation (Agyarko 2003). A more detailed overview of the condition of Ghana's forest reserves is provided in upcoming paragraphs.

The concept of forest reserves was originally introduced by the colonial government under the Forest Ordinance of 1911. The government's initial strategy was one of persuading chiefs and traditional landowners to create their own reserves by passing local by-laws. The strategy received little in the way of enthusiasm from the traditional landowners. The government revised its strategy and shifted focus to compulsory reservation with the implementation of the Forest Ordinance of 1927 (Cap. 157). The majority of Ghana's forest reservations were established in the 1920s and 1930s (Kotey *et al.* 1998).

The Forest Policy of 1948 expanded on the concept of forest reserves providing for the conservation and protection of forested areas in Ghana to protect major water catchments and to maintain a climate favorable to the production of agricultural crops (Kotey *et al.* 1998). While environmental concerns were put forth as the primary reason for forest reservation, in reality the main intention was to ensure the timber industry had a continuous supply of wood (Forest and Wildlife Policy 1994).

Theoretically, the creation of a forest reserve did not affect the ownership of the land nor the forest thereupon. To this day ownership of forest reserves remains with the landholding communities, represented by their chiefs, however management of the area is vested in the Forest Services Division. The FSD is charged with managing the reserves, on behalf of the resource owners and in the best interest of the nation (Kotel *et al.* 1998).

The Minister of Lands and Forestry is responsible for granting timber concessions for logging activities in forest reserves. The Forestry Services Division collects rents, royalties, and fines for the government and also distributes royalties and other revenues generated from the reserves to the land owning stools, traditional councils, District Assemblies and the central government (Inkoom 1999).

Measures taken to date to protect forest reserves have proven largely ineffective (Inkoom 1999). As a result most forest reserves today are quite degraded. Table 6 provides a summary of forest reserve conditions. Of all forest reserves: 16 percent are in

good condition, 35 percent are partly degraded, 20 percent are mostly degraded, 15 percent can be described as in very bad shape with less than 25 percent in coherent canopy, and the remaining 14 percent of forest reserves are classified as containing no significant forests (Hawthorne and Abu-Juam 1995).

**Table 6. Condition of Ghana's forest reserves (Hawthorne and Abu-Juam 1995).**

| Percentage of Reserves | Reserve Condition |
|---|---|
| 2 | Excellent |
| 14 | Good |
| 35 | Partly degraded |
| 20 | Mostly degraded |
| 15 | Very bad |
| 14 | No significant forest |
| 100 | Total |

While the degradation of forest reserves is attributable to several agents (namely: commercial logging, Ghanaians heavy dependence on fuelwood, bushfires, and shifting cultivation) the underlying cause is the alienation of local people from forest reserves. The alienation has occurred as a result of the deterioration of their rights to forest reserves – both in terms of access as well as decision making pertaining to forest management – combined with the decreased financial share of benefits they receive from commercial forestry operations carried out in their reserves.

Alienation of local people

The right of the resource owners (generally the forest fringe communities) to access forest reserves and the associated resources has changed dramatically over time. Prior to the establishment of forest reserves, local communities owned the forests and

had unlimited access to the forest resources. In the early years, communities' rights pertaining to forest reserves diminished slightly, however they maintained communal rights to access resources in the reserves for personal use. Accessing the resources required permits from the Forest Services Division (then the Forestry Department) however the permits were free. As time passed the Forestry Department began to perceive the rights as being abused as they thought local people were selling resources commercially with people from afar benefiting the most (Inkoom 1999).

In reaction to the believed abuse of rights, the Forestry Department further restricted the rights of communities to access forest reserves through the inception of levies, fines, and a stricter permit system. Impeding the rights of local people to areas owned by their families "since time immemorial" and on which their survival was heavily dependent resulted in the estrangement of local people. Local people by and large lost interest in maintaining the health and integrity of forests contained in reserved areas as they felt they no longer had a stake in the forests. The alienation of local people essentially resulted in the removal of the original forest stewards. The Forestry Department then had to step in and fill the void. The strategy of the Forestry Department essentially involved policing the reserves. In 1974 the Forest Protection Decree (NRDC 243) was passed, changing forest management by prohibiting a range of activities within reserves through criminal sanctions for anybody who violated the laws (Inkoom 1999).

As people's right to access forest reserves continued to erode, forest management was becoming increasingly centralized, consequently diminishing the role of traditional

authorities. Traditional authorities had often been involved, and had been quite effective, in collecting forest royalties and monitoring logging activities in their areas. Reducing the involvement of traditional authorities severely decreased the supervision of commercial forestry activities, including the collection of forest royalties. The shift to centralized forest management effectively resulted in the crumbling of the traditional authority's "spy system of village chiefs, elders, and farmers" (Kotey *et al.* 1998).

As the Forestry Department's role in managing forest reserves continued to increase, its share of the benefits accrued from forest activities increased substantially. The current sharing arrangement on revenues accrued through commercial logging operations carried out in forest reserves results in 70 percent of the revenue going to the Forestry Commission and 30 percent to the Administrator of Stool Lands (Fig. 7). Ten percent of the total stumpage is kept by the Administrator of Stool Lands. The Administrator of Stool Lands – a government body established under Ghana's Constitution – manages revenues generated from stool lands (The Constitution of the Republic of Ghana (Amendment) Act 1996). The remaining 20 percent is passed on with 11 percent going to the relevant district assembly, four percent to the relevant traditional council and a mere five percent of the total stumpage going to the relevant landowning stool (Kotey *et al.* 1998). The current revenue sharing arrangement results in few to no real benefits trickling down to local people: the resource owners (Inkoom 1999).

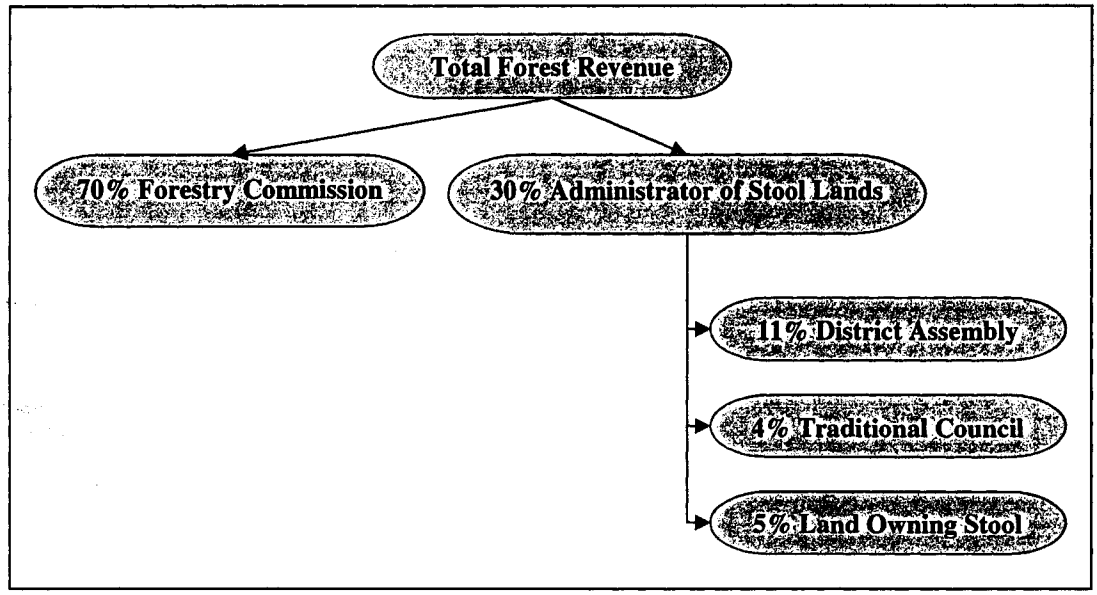


**Figure 7. Revenue sharing arrangement on revenues accrued through commercial logging operations in forest reserves (Kotey *et al.* 1998).**

Off-Reserve Areas

Off-reserve forested areas in the Forest Zone were not protected under The Forest Policy of 1948. The rationale at the time was all forests outside forest reserves would systematically be liquidated as forests were cleared for agricultural land (Kotey *et al.* 1998; Inkoom 1999). Rather than trying to protect forests in off-reserve areas, The Forest Policy of 1948 sought to ensure trees that were felled were used for timber instead of simply being destroyed in advance of converting the land to agriculture. The government created strategies aimed at encouraging concessionaires to quickly move in and harvest trees before they were destroyed by farmers (Mayers *et al.* 1996). As a result of the lack of emphasis placed on managing off-reserve areas they have become "no-man lands" leaving the forests thereon subject to severe destruction and deforestation (Inkoom 1999).

Today forests continue to survive off-reserve in the Forest Zone; however they are disappearing at alarming rates. The effort to protect off-reserve forests is severely undermined due to a lack of adequate information. Estimates of remaining closed forest in off-reserve areas range quite considerably from as little as 200 square kilometres (20,000 ha) to as much as 3,700 square kilometres (370,000 ha). Much of the remaining off-reserve forest is found as small fragmented patches in swamps and sacred groves. In addition to the remaining dispersed patches of off-reserve forests significant amounts of resources exist as trees scattered throughout agricultural fields (Inkoom 1999).

The majority of the trees scattered throughout agricultural areas likely originated through natural regeneration *i.e.*, they were not planted as agroforestry trees. While agroforestry is a common topic within many of Ghana's institutions, based on the author's travels the application of agroforestry techniques is not as prevalent in the field. Information specific to agroforestry in Ghana is also difficult to find.

Until recently, another challenge associated with managing off-reserve areas involved the fact that multiple government bodies were involved in managing the resource. The Forest Services Division was to ensure the supply of the resource; however the Lands Commission was responsible for the allocation of concessions and collection of rents and royalties. The Lands Commission is a government body – established under the Ghanaian Constitution – to manage public lands (roughly ten percent of Ghana's total land base) on behalf of the government (The Constitution of the Republic of Ghana (Amendment) Act 1996). In addition to the normal problems arising when multiple organizations are involved managing one resource, Lands Commission

officers were not properly trained to carry out their duties of monitoring the number and types of tree species felled. As a result concessionaires and chainsaw operators were often able to avoid felling controls and to escape without paying for felled trees (Inkoom 1999).

Another factor that has resulted in a decrease in the number of off-reserve trees involved the fact that trees in off-reserve areas were vested in the state. As a result, not only did farmers have no say in whether trees could be harvested from fields they were cultivating, they also received little or no compensation for any damage caused to their crops during harvesting operations. Since commercial tree species held no incentive for farmers (and in reality the damage done to their crops during the removal of trees acted as a major disincentive) they often destroyed them, and prevented the growth of new trees on their farms. Needless to say, vesting off-reserve trees in the state proved very detrimental to off-reserve resources (Kotey *et al.* 1998). Currently, the only felling restriction (implemented by the then Forestry Department) in off-reserve areas is a minimum-girth limit which is widely ignored.

New forest policies, namely the Forest and Wildlife Policy of 1994, have been created since the Forest Policy of 1948; they have however no clear statements pertaining to the management of off-reserve areas. As a result, measures implemented to manage off-reserve areas have been done on an ad-hoc basis and have been ineffective in protecting the resource (Inkoom 1999). This lack of control is unfortunate as off-reserve areas are the biggest supplier of commercial timber; providing 71 percent of the total harvest (Birikorang *et al.* 2001).

## THE FORESTRY INDUSTRY

The forestry industry is an important component of the Ghanaian economy. In 1999 the industry employed over 104,000 people and generated $174 million US on exports alone. The forestry industry is characterized as: having a capacity far greater than the nation's Annual Allowable Cut (AAC) and rampant levels of illegal logging activities; being inefficient in terms of conversion rates and based predominantly on primary and secondary processing.

Ghana's AAC is derived from both forest reserves and off-reserves areas. In 2003 Ghana's AAC was 1.01 million cubic metres per year. Half of the AAC was to be harvested from forest reserves with the other half coming from off-reserve areas. An AAC of 500,000 cubic metres from a timber production area of 800,000 hectares is quite low (especially when one considers it is in a tropical region). It is important to bear in mind however that only 16 percent of Ghana's forest reserves are described as being in good or excellent condition, the remaining 84 percent being in poor condition. Another factor affecting the harvest level from forest reserves is that while several trees may be present within any given area, only certain species are commercially desirable (Agyarko 2003).

The forest reserve AAC was calculated based on an inventory of tree species present in timber production areas of Ghana's forest reserves. Timber Production Areas of Ghana's forest reserves cover approximately 800,000 hectares. Of the 300 tree species identified during the inventory only 60 species were of commercial interest. The inventory determined the number of standing stems of commercial importance in the timber production areas. The FC then decided that 683,100 cubic metres could be harvested from the timber production areas on an annual basis (Agyarko 2003). While 683,100 cubic metres was deemed sustainable, the AAC from forest reserves was set at 500,000 cubic metres per year.

Ghana's milling capacity increased steadily throughout the 1990s. It is currently estimated at 5.1 million cubic metres; nearly five times the nation's AAC of 1.01 million cubic metres per year (Birikorang *et al.* 2001). This overcapacity has resulted in phenomenal amounts of illegal logging operations. In 1999 the illegal harvest was estimated at 2.621 million cubic metres; roughly two and a half times Ghana's legal harvest (Table 7). Approximately one million cubic metres of the illegal harvest is attributable to illegal operations carried out by forestry companies, while 1.696 million cubic metres is due to illegal chainsaw operations. Illegal logging is a problem in both forest reserves and off-reserve areas [Abruquah (pers. comm., 12 November 2003)][2].

Illegal chainsaw operations generally consist of small groups of people who enter forested areas, fell trees and convert the timber into lumber at the stump with chainsaws. Of the estimated 104,000 jobs created by the forest industry, 47,000 jobs are attributable

[2] Mrs. Edith Abruquah is a Regional Manager with the FSD.

to illegal chain saw operations. The majority of lumber produced from chainsaw operations goes to supplying furniture manufacturers (Birikorang et al. 2001).

**Table 7. Summary of Ghana's 1999 timber harvest levels (Birikorang *et al.* 2001).**

| Volume (million m3) | Harvest Type |
|---|---|
| 1.095 | Legal Harvest (AAC) |
| 0.925 | Illegal Commercial Harvest |
| 1.696 | Illegal Chainsaw Operations |
| 3.716 | **Total** |

The sizeable volume of lumber produced through illegal chainsaw operations is not an indication of operators being able to carry out their activities unnoticed by local people. Local people do notice the activities, however they tend to intentionally ignore them. In many cases they actually help the operators, as chainsaw operations provide them with a relatively cheap source of lumber while creating local employment and income. Illegal operators often hire local people to carry chainsaw lumber as head loads from the stump to trucks, and will compensate farmers in cash to be allowed to carry out operations on their farms (Birikorang *et al.* 2001).

In addition to the benefits illegal operations generate for local people, chainsaw operations also have environmental benefits when compared to conventional harvesting systems. Chainsaw lumber is transported from the forest as loads on people's heads rather than being skidded out in log form as is the case of commercial operations. Transporting smaller head-loads results in less ground disturbance and does less damage to residual trees than conventional skidding operations (Birikorang *et al.* 2001).

Drawbacks of illegal chainsaw operations include: they are often carried out in a concession area belonging to another company, the government is unable to charge stumpage on chainsaw lumber, and low conversion rates associated with chainsaw lumber. The conversion rate is a measure of the efficiency with which raw wood is converted into a product. Conversion rates of lumber produced via chainsaw operations is 27 percent compared to a conversion rate of 34 percent for lumber produced in sawmills (Table 8). Taken a step further, when chainsaw lumber is examined in terms of quality comparable to lumber produced in sawmills, the chainsaw lumber conversion rate is a mere ten percent. Furthermore, people who use chainsaw lumber to produce products have low recovery rates, generally in the range of 70 percent (Birikorang *et al.* 2001). The conversion rates do not include wood volumes sold from saw mills and veneer mills as scraps to other companies. Many of the off-cuts are sold to bakeries where they are used as energy, while some off-cuts are sold to tertiary processors (Birikorang *et al.* 2001) for the production of, for example, beds, doors and fine carvings.

**Table 8. Lumber conversion efficiency rates by production type (Birikorang *et al.* 2001).**

| Production type | Conversion Rate (%) |
|---|---|
| Sawmill Lumber | 34.3 |
| Rotary Veneer | 51 |
| Sliced Veneer | 39.5 |
| Chainsaw Lumber | 27 |

## ENVIRONMENTAL DEGRADATION

Considerable environmental degradation is occurring in Ghana, compounding current social and economic challenges facing the country. The cost associated with environmental degradation is estimated at four percent of Ghana's GDP (Rawlings 1995); nearly equivalent to the 1999 annual economic growth rate of 4.5 percent (Morrissey 2000). Environmental degradation costs are incurred as a result of physical damage to natural resources as well as decreases in the health and quality of life for Ghanaians.

While many different forms of environmental degradation are occurring in Ghana, deforestation is likely the most devastating. Deforestation is extremely damaging due to the importance of forests in providing both essential environmental services such as soil conservation and the sequestration of Carbon, and a large variety of products; especially important to the substantial portion of Ghanaians who live as subsistence farmers. Deforestation gives rise to several other problems such as increased occurrences of drought, floods, shortages of water and fuelwood, soil erosion, soil degradation, and desertification. An estimated 35 percent of Ghana is at risk of desertification (Rawlings 1995).

In 1999 deforestation was estimated to be occurring at a rate of over 25,000 hectares per year (Canadian International Development Agency 1999). As noted earlier

the main factors contributing to deforestation in Ghana are commercial forestry, Ghanaians heavy dependence on fuelwood as an energy source, and bushfires.

## COMMERCIAL FORESTRY

Logging practices world wide have an effect upon the residual forests that is the forest left behind after logging. The effects – such as soil disturbance and physical damage done to other trees left standing – can be minimized through proper management. Unfortunately, commercial logging operations are not being well managed in Ghana and as a result are having considerable negative effects on the forests. Ghana's AAC, based in theory on a sustainable harvest level, was 1.01 million cubic metres per year. In 1999 commercial forestry operations harvested 3.72 million cubic metres of wood (Birikorang *et al.* 2001). Harvest levels three and a half times greater than the estimated sustainable harvest level place tremendous stress on the forest resource.

Many of the interviewees described Ghana's conventional logging operations as being very damaging to the forests. Much of the damage was attributable to poor tree felling and the extraction of logs from the forests, using large equipment such as bulldozers. The problem with felling and skidding is due to a lack of planning before the operations are undertaken. Yield allocation and stock survey procedures and rules do not pay enough attention to detail and as a result have serious effects on the residual

forest over the long term (Kakrada and Maginnis 1992; Maginnis 1992). Hawthorne and Abu-Juam (1995) stated "the rules are inadequate to protect the vegetation; but even the good rules are poorly applied."

In addition to the immediate damages to the forest, poor management of commercial forestry operations can also render forests more susceptible to other damaging agents. Currently, no limit exists on the number of trees that can be removed from a forest compartment. This factor can be extremely damaging in tropical forestry as logging that opens the canopy too much, increases the potential for bushfires to burn into the forested areas (Hawthorne 1994). This tends to be a problem in higher risk areas such as near the boundary of the Forest and Interior Savannah Zones. The effects of bushfires are discussed in greater detail in pages to follow. Commercial logging operations are not the only agent responsible for forest degradation, Ghanaians heavy reliance on fuelwood also places considerable stress on forest resources.

## FUELWOOD AS AN ENERGY SOURCE

Fuelwood (including charcoal) is by far the most dominant energy source used in Ghana, responsible for 71 percent of the country's energy (Rawlings 1995). Fuelwood is used predominantly for cooking purposes, supplying 85.8 percent of all energy consumed for cooking. Most people in rural areas use fuelwood for cooking, while people in urban areas tend to rely mainly on charcoal (Laing 1994). The use of gas as a

cooking fuel is only significant in the Greater Accra region (Ghana Statistical Service 2002).

The heavy reliance on wood as an energy source places tremendous stress on Ghana's renewable resources. Each year an estimated 12 (Birikorang *et al.* 2001) to 17 (World Bank 1988) million cubic metres of wood are consumed as fuelwood or charcoal. That is roughly three to four-and-a-half times as much wood as is harvested by the commercial forestry industry. Much of the charcoal consumed in Ghana is produced in the northern part of the country and is transported to major markets in the south. In the past fuelwood and charcoal supplies were produced mainly from deadwood or trees felled to clear farming areas. Increasing population and the subsequent increase in demand has caused the market to become highly commercialized resulting in the cutting of live standing trees for fuel. Most fuelwood is obtained from natural ecosystems with very little coming from plantations (Environmental Protection Council 1991).

Ghana's dependence on wood as an energy source also compounds social conditions in the country. The task of fuelwood procurement is generally delegated to females and takes a significant portion of their days to complete. The time spent carrying wood and hauling water constrains development as it restricts women from achieving their full potential in life (Rawlings 1995).

Initiatives have been implemented with the intent of shifting Ghanaians to use liquefied petroleum for cooking in the place of fuelwood and charcoal. Petroleum was made affordable through the provision of subsidies, however the idea did not catch on due to peoples' taste preference for foods cooked with charcoal over foods cooked using petroleum [Quashie-Sam (pers. comm., 17 July, 2002)].

## BUSHFIRES

Commercial forestry operations and the demand for fuelwood place considerable stress on Ghana's forest resources, however their combined effect is likely less damaging than the detrimental effects generated as a result of bushfires. In recent times bushfires have become the most degrading environmental factor in Ghana (Environmental Protection Council 1991). While the physical effects of bushfires are concentrated in rural areas, most Ghanaians are affected by bushfires to some extent (Korem 1985). The country's ability of suppressing bushfires is very poor; which is extremely serious as Ghana is composed of fragile ecosystems prone to drought and desertification. Reducing the occurrence of bushfires is a complicated task however it is paramount to protecting Ghana's renewable resources. This section introduces some of the causes and effects of bushfires to illustrate the complexity and necessity associated with reducing the occurrence of bushfires in Ghana.

## Causes of Bushfires

Fires are a way of life in West Africa; the region experiences the highest proportion of annual fires in the world. Two types of bushfires exist in Ghana: natural and human caused. Natural bushfires, such as those caused by lightning, are responsible for only two percent of all bushfires in Ghana. The remaining 98 percent of bushfires are caused by humans. While some human caused bushfires are accidental in nature, for example those arising as a result of abandoned camp fires or careless smoking, most bushfires arise from deliberately set fires (Pyne 1999).

## Uses of Fire

Fire is commonly used by a wide variety of Ghanaians to achieve an even wider range of objectives. Farmers use fire to clear vegetation from their agricultural fields to facilitate cultivation. A Nicaraguan proverb describes the usefulness of fire in clearing vegetation: "One man in one day with one match can clear a hundred acres" (Korem 1985). In an economic sense burning is the most cost effective means of clearing slash and felled trees to enlarge fields, or to clear agricultural waste products such as maize and rice stalks. Farmers also burn to create barriers protecting their un-harvested crops of rice and cocoa from bushfires. Burning is carried out early in the dry season, creating a black barrier, which subsequently gives rise to a green barrier during the dry season's

hot, dry harmattan winds (Pyne 1999). Harmattan winds are dry, dusty, persistent winds that blow south from the Sahara (Morris 1982).

Hunters set fires to flush out game. Following the rains animals such as duikers, bush pigs, and antelopes will return to the burned site to feed on the succulent green vegetation springing up from the burn (Pyne 1999). Villagers burn around their homes, creating protective barriers against the bushfires that will undoubtedly occur later in the dry season (Nsiah-Gyabaah 1996). Fire is used near homes to destroy bushy vegetation in which cobras and other nuisance animals hide. Fire is also used by villagers for garbage disposal (Pyne 1999).

Fire is used to achieve several other vegetative management objectives. Pastoralists set fires to rejuvenate dormant grasses and to improve the quantity and quality of browse for their animals. Fire is also used to: control the advance of trees, and to kill ticks and snakes in pasture areas (Pyne 1999). Foresters set fires to encourage and maintain certain plants, especially ones with medicinal values (Nsiah-Gyabaah 1996). Fires are set below the canopy of Dawadawa (*Parkia clappertonia* Keay) trees to promote fruiting. Early burning is used under valuable trees, such as Mango (*Mangifera indica* Linn.) trees and in Teak (*Tectona grandis* Linn. f.) plantations to protect trees from the more intense fires later in the dry season. Burning beneath trees early in the dry season reduces fuel loads ensuring if a bushfire does burn through the areas the fire will be less intense decreasing the potential of the fire reaching the tree canopy and subsequently destroying the tree (Pyne 1999).

Fire is also used in a variety of other activities. Fire is used to gather honey; the smoke moving the bees. Burning is used to control mosquitoes by removing the grassy dews in which mosquitoes lay their eggs. Fire is essential to charcoal production, an important aspect of the lives of many Ghanaians, and one of the main sources of income for women living in rural areas (Rawlings 1995). School children even burn their playgrounds to remove grass (Pyne 1999).

Fire is deeply ingrained in many of the practices carried out in rural areas. Some observers in Ghana suggest the removal of fire would "lead to the collapse of human life" (Pyne 1999). While such words are obvious over-statements, they illustrate the extent to which rural Ghanaians rely on fire for day-to-day activities.

Fire in Ghanaian Culture

Many people are beginning to understand the damaging effects of fire, yet they continue burning due to fires deep embedment in Ghanaian culture. If farmers are asked why they burn their fields, many will respond it is not to increase soil fertility, or even to derive management objectives, rather if they do not burn other farmers will laugh at them for having untidy farms (Korem 1985; Pyne 1999). The extent to which burning is ingrained in Ghanaian culture can be observed in some of the Ghanaian tribal names for February. The *Twi*, for example, call February '*Ogyefuo*', meaning "fire farm". The *Akwapin* refer to February as '*Apambere*' which translated means the "time of collecting smoldering stems". The *Ewe* refer to February simply as '*Dzove*' meaning "burn" (Pyne

1999). While fires can be used to derive certain desired benefits they often escape their confines, become out-of-control bushfires and result in wide-spread damage.

## Effects of Bushfires

One of the most obvious effects of bushfires is the physical destruction of houses and other buildings in rural areas. While such damage is serious and makes the lives of rural Ghanaians more difficult, it is likely the least significant damage created by bushfires. Buildings can be rebuilt; the damage indiscriminate burning causes to the environment takes far longer to repair however and in fact may never fully recover.

### Soil Degradation

Farmers in the savannah region of Ghana have been observing rapidly decreasing productivity from their agricultural fields. Today, some farmers have to cultivate two to three times more land simply to maintain yields. While several factors contribute to the decreased soil productivity bushfires are a major culprit. Much of the degradation is attributable to the removal of vegetation from the soil surface and the destruction of organic matter (OM) in the soil profile (Korem 1985).

Vegetation acts as a shield protecting the fragile soil from the impact of tropical scale raindrops and intense solar rays. Moisture intercepted by vegetation has one of

three fates: some evaporates never reaching the soil, some passes through the canopy as throughfall, and some travels down stems as stem flow. As moisture passes through the vegetation its velocity is reduced. Vegetation therefore decreases the amount and rate of the precipitation reaching the soil (Garrett *et al.* 2000).

In addition to protecting the soil, vegetation is also the soil's main source of organic matter; supplying the soil through litterfall. The destruction, or degradation, of vegetation as a result of bushfires decreases the amount of organic matter being added to the soil. Bushfires also decrease the amount of OM present in soil. Soil in the upper portion of the soil profile is consumed directly during bushfires through combustion, and following bushfires due to increased soil temperatures. Soil temperatures increase after bushfires as a result of blackened soil surfaces and increased levels of solar radiation reaching the soil due to the lack of vegetation. Soil microbial activity also intensifies with increased soil temperatures, resulting in increased consumption of OM (Korem 1985).

Reduced levels of soil organic matter is detrimental to soil structure. Organic matter is the major agent responsible for the formation and stabilization of aggregate structure. There are basically two ways in which organic matter accomplishes this feat. First by providing the substrate for fungi, bacteria, and soil animals to survive. Second, organic matter decomposes and releases gels and viscous materials that encourage aggregate formation (Brady and Weil 1999). The organic matter content of a soil therefore affects the stability of soil structure. Soils richer in organic matter are more stable than those with lower amounts (National Academy of Sciences 1972).

Fires result in decreased soil fertility. Fires convert significant amounts of nitrogen and sulphur, and some phosphorus to gaseous forms which are then easily lost from the site (Brady and Weil 1999). Nitrogen, sulphur, and phosphorus are macronutrients; required by plants in large concentrations for growth and development to occur (Brady and Weil 1999). Nitrogen is of extreme importance as it affects plant-grain size and the protein content of seeds and foliage (National Academy of Sciences 1972).

Soil fertility also decreases due to the reduced levels of soil organic matter (SOM) following fires. The soil's cation exchange capacity (CEC), a measure of the soil's ability to hold nutrients, is reduced as SOM levels decrease subsequently increasing the potential for nutrient losses through leaching. Decreased soil fertility is especially devastating in savannah regions as most soils have developed from deeply weathered parent materials leaving them with low levels of nutrients to begin with (Brady and Weil 1999).

Lower amounts of SOM combined with the increased rate at which precipitation reaches the soil leads to structural degradation, resulting in: 1) the transportation of fine soil particles to lower depths in the soil via illuviation 2) a decrease in aeration porosity, and 3) a decrease in percolation rates. All three effects are detrimental to agriculture. Decreased percolation rates reduce the soils ability of accepting continuous amounts of water therefore increasing the potential for water caused soil erosion (National Academy of Sciences 1972).

Soil erosion is devastating as it results in the removal of the uppermost portion of the soil profile characteristically the most fertile zone (Brady and Weil 1999). Studies in neighboring Côte d'Ivoire indicate soil losses on areas void of vegetation (similar to the conditions following a bushfire) to be as great as 117,000 kg of soil per hectare in a single year. Erosion rates are much lower when vegetation, such as crops or forests, is protecting the soil (FAO 1970). Decreased soil erosion rates under vegetation are attributable to improved soil structure (Garrett *et al.* 2000) and the shielding effect of vegetation. In addition to the loss of fertile soil, erosion may lead to laterization; an extremely damaging soil process that renders land incapable of supporting crops or trees. The laterization process was described in the Soil Conditions section of the literature review.

Forest Degradation

Bushfires are very detrimental to forests, especially in the savannah region, destroying small seedlings and even larger sized trees. As forests are degraded, or an area is deforested, they become poorer sources of water, forcing women to walk longer distances to obtain water for their families. Conditions are becoming so critical many women must walk between eight and 16 kilometres one way to obtain water (Korem 1985).

Bushfires are also a problem in the Forest Zone, where they were previously unheard of. The increase in bushfires combined with human activities in forested areas has facilitated the spread of bushfires into the Forest Zone. Today bushfires are recognized as one of the most serious agents of deforestation having degraded or destroyed approximately 30 percent of forests in the semi-deciduous rainforest area of the Forest Zone (Hawthorne and Abu-Juam 1995). As fire penetrates into the forest young trees are often destroyed subsequently reducing the forests ability to regenerate naturally. Unless fire is kept out of the area for several years the tree canopy will gradually open, resulting in forest degradation and often complete deforestation.

Commercial forestry operations, Ghanaians heavy dependence on fuelwood as an energy source, and bushfires place tremendous stress on Ghana's renewable resources. The pressure placed on Ghana's water, lands, forests, and wildlife is likely to continue increasing with Ghana's growing population. Current levels of: malnutrition, poverty, literacy and education are already severe (Rawlings 1995) and are likely to worsen as environmental degradation continues. Ghana's future is inextricably linked with the health of its renewable resources. The future health of Ghana's renewable resources depends on the nation's ability to mitigate environmental degradation. Ghana's renewable resource policy outlines the nation's strategic direction for protecting its renewable resources.

## RESEARCH PROCEDURE

Much of the information contained in this thesis was gathered during a three month research period spent at various locations throughout Ghana during the summer of 2002. The majority of the time was spent in Kumasi, with a significant amount of time spent in Accra and some time also in smaller villages in Ghana's Upper West Region.

Many policies have been created to deal with the management and conservation of Ghana's renewable resources. After an examination of environmental degradation occurring in the country combined with consultation with a variety of professionals in relevant fields in Ghana, it was decided the most prudent policies for the study to focus on included: the Forest and Wildlife Policy of 1994, the Timber Resources Management Act of 1997 (Act 547) and its amendments, the Control and Suppression of Bushfires Law (P.N.D.C. Law 229) of 1990, and the National Land Policy of 1999. As research progressed the National Population Policy of 1994 was incorporated into the study's scope.

Considerable amounts of information used in the analysis of Ghana's renewable resource policy were gathered from literature at various libraries throughout Ghana; however the majority of the ideas and information came from interviews conducted with experts in relevant fields. The experts ranged from farmers in rural areas of Ghana's Upper West Region to senior ranking officials within public institutions.

Interviews were deemed as an effective way of gathering information for two major reasons. First a lack of literature pertaining to the analysis of Ghana's resource policy due in large part to the relatively recent nature of many of the policies; and second, and most importantly, because people involved with the policies have a solid understanding not only of how well policies are working in the field, but also of how to improve them to increase their effectiveness.

The interview process was substantial with a wide variety of individuals being interviewed from a number of different organizations, and from remarkably different walks of life. Interviews focused not only on those responsible for the creation and implementation of policies, but also those affected by the policies at the ground level. Table 10 provides a summary of the types of people interviewed and organisations visited during the research period. Table 9 is by no means an exhaustive list; its inclusion was to illustrate the broad scope of the interviews conducted. In addition to the interviews highlighted in Table 9, interviews were carried out with numerous villagers from the following communities in the Upper West Region: Ase, Ga, Poyentanga, Jingu, Samanbo, Charia, Loho, and Tanina, and the following villages in the Northern Region: Bamboi and New Longoro. Village coordinates are provided in Table 10.

**Table 9. Overview of organisations visited and positions of individuals interviewed during research period.**

| Organisation | Position |
|---|---|
| Forest Services Division of the FC | Regional Managers<br>Assistant Regional Managers<br>Plantation Development Manager<br>Production Manager<br>Forestry Officers |
| Resource Management Support Centre of the FC | Environmental Conservation Manager<br>Manager, Collaborative Forest Management |
| Wa District Assembly | District Assemblymen |
| Ghana National Fire Service (Wa) | District Fire Officer for the Upper West Region<br>Operational Officer<br>Bushfire Coordinator<br>Firefighters |
| Forest Research Institute of Ghana | Project Coordinator of the ITTO's Forest Fire Management Project |
| World Bank (Accra) | Natural/Environmental Resource Management Specialist |
| Policy Planning, Monitoring, and Evaluation Division of The Ministry of Lands and Forestry | Technical Director Forestry<br>Technical Director Lands |
| The Food and Agriculture Organisation of the United Nations | Forestry Planning Officer |
| SKO Timbers | Sawmill Finance & Administration Manager |
| Forest Products Inspection Bureau | Manager of the Kumasi Office |
| Institute of Renewable Natural Resources at the Kwame Nkrumah University of Science and Technology (KNUST) | Lecturers and Technicians |
| Faculty of Agriculture (KNUST) | Senior lecturer |
| Ministry of Agriculture | Deputy Director of Crop Services |
| Environmental Protection Agency | Deputy Director<br>Program Officers<br>Assistant Program Officers |
| Lands Commission | Regional Lands Officer<br>Deputy Regional Lands Officer |
| National Population Council Secretariat | Regional Population Officer |
| Forest Plantation Development Centre | Project Manager |
| World Vision International | Area Development Program Manager<br>Program Officer for Agriculture |
| The Ministry of Education | Workers in Girl Education |

**Table 10. Coordinates of villages involved in the interview process.**

| Community | Coordinates |
|---|---|
| Ase | 10°05′ N, 2°37′ W |
| Ga | 9°47′ N, 2°29′ W |
| Poyentanga | 9°53′ N, 2°27′ W |
| Bamboi/New Longoro | 8°10′ N, 2°5′ W |
| Jingu | 10°05′ N, 2°34′ W |
| Samanbo | 9°49′ N, 2°29′ W |
| Charia | 10°07′ N, 2°34′ W |
| Loho | 10°07′ N, 2°33′ W |
| Tanina | 9°54′ N, 2°37′ W |

The research period spent in Ghana during 2002 was the author's second visit to Ghana. The author's first visit to Ghana was in 1999 as an undergraduate student on a student work exchange with the Ghana-Canada *IN CONCERT* Program, a Canadian International Development Agency (CIDA) funded initiative run through The Faculty of Forestry and the Forest Environment at Lakehead University in Thunder Bay, Ontario, Canada. The undergraduate exchange was extremely beneficial to the study as the first visit in Ghana provided the author a good understanding of environmental challenges facing Ghana and an introduction to how some of the country's renewable resources are managed. Many of the personal connections formed with experts in relevant fields during the author's first visit to Ghana were invaluable to the research component of this study.

## RENEWABLE RESOURCE POLICIES

Many policies exist governing the management and use of Ghana's renewable resources. This section provides a brief overview of the evolution of Ghana's policies and a description and analysis of some of Ghana's main renewable resource policies to ascertain how effective the strategies will be in mitigating environmental degradation. Policies currently in place to deal with the critical forms of environmental degradation include: the Forest and Wildlife Policy of 1994, The Timber Resources Management Act of 1997 (Act 547) and its amendments, The Control and Suppression of Bushfires Law (P.N.D.C. Law 229) of 1990, The National Land Policy of 1999, and The National Population Policy of 1994.

### EVOVLUTION OF GHANA'S POLICIES

Considerable changes have occurred in, what is now, Ghana since the late 1800s through its evolution from a British colony to its current state. These changes are apparent in the focus of Ghana's renewable resource policies over the same period. Kotey *et al.* (1998) summarizes the changes to Ghana's policies as four distinct policy phases from the 1870s to today. These phases include a consultative phase from the 1870s to the late 1930s, a "timberisation" phase from 1940 to the mid 1950s, a "diktat" phase from the mid 1950s to the early 1990s and a collaborative phase from 1994 to

today. Table 11 provides a chronological overview of Ghana's important policies, acts, and other events throughout Ghana's history.

**Table 11. Chronological overview of key events in Ghana's history.**

| Year | Key Policies, Acts and Events |
|---|---|
| 1909 | Establishment of the Forestry Department |
| 1911 | Forest Ordinance |
| 1925 | Forest Reserve Rules, 1925 (L.I. 889) |
| 1927 | Forest Reserve Regulations, 1927 (L.I. 284) |
| 1927 | Forest Ordinance, 1927 (Cap.157) |
| 1948 | Forest Policy of 1948 |
| 1951 | Concession Ordinance, 1951 (Cap. 136) |
| 1951 | Forests Ordinance, 1951 (Cap. 157) |
| 1951 | Forests (Amendment) Ordinance, 1951 (Cap. 157A) |
| 1957 | Ghana gains its independence from Great Britain |
| 1961 | Trees and Timber (Control of Export Logs) Regulations (L.I. 130) |
| 1962 | Concession Act, 1962 (Act 124) |
| 1962 | Concession Regulations, 1992 (L.I. 228) |
| 1968 | Ghana Timber Marketing Board (Recovery of Loans) Decree, 1968 (N.L.D.C 294) |
| 1974 | Forest Protection Decree, 1974 (N.R.C.D. 243) |
| 1982 | Timber Concessions (Revesting) Law, 1982 (P.N.D.C.L. 17) |
| 1982 | Timber Concessions (Revesting) (Amendment) Law, 1982 (P.N.D.C.L. 35) |
| 1983 | The Control of Bush Fires Law, 1983 (P.N.D.C.L 46) |
| 1986 | Forest Protection (Amendment) Law 1986 (P.N.D.C.L. 142) |
| 1990 | The Control and Prevention of Bushfires Law (P.N.D.C.L 226) |
| 1994 | Forest and Wildlife Policy of 1994 |
| 1997 | Timber Resources Management Act, 1997 (Act 547) |
| 1998 | Timber Resources Management Regulations, 1998 (L.I. 1649) |
| 1999 | The Forestry Commission Act, 1999 (Act 571) |
| 1999 | The National Land Policy |
| 2002 | Timber Resources Management Act, 2002 (Act 617) |

Consultative Phase (1870s to the late 1930s)

The consultative phase encompasses the period stretching from the introduction of colonial rule in the 1870s to the outbreak of World War II. This phase saw the

establishment of formal forestry and the timber trade, rapid expansion of cocoa production (the main export crop) and the creation of the Forestry Department. Policy focused on the establishment of forest reserves in the Forest Zone to protect watersheds and maintain climatic conditions favorable to cocoa production. Policies developed for off-reserve areas focused on ensuring the efficient use of timber resources as forests were liquidated and converted into cocoa plantations (Kotey *et al.* 1998).

The colonial government's policies focused on strengthening traditional institutions such as the chieftaincies. Emphasis was placed on consultation with land owning communities for the establishment of forest reserves and the management of the resources therein. Chiefs were in charge of negotiating their own concession agreements with loggers and were responsible for determining and collecting royalties (Kotey *et al.* 1998).

"Timberisation" Phase (1940 to the mid 1950s)

A shift occurred during this phase in which policy focused on timber production with less emphasis placed on the non-timber forest products local people had traditionally depended on from the forests. Cocoa production remained an important consideration however policies placed less emphasis on the environmental importance of forest reserves in maintaining climatic conditions favorable to cocoa production. Forest policies began paying less attention to the benefits of forests for local communities and more emphasis on the importance of forests in the development of the evolving nation. The role of traditional landowners in forest management began to decrease as foresters

and timber merchants began having a stronger say in how the forests were to be managed (Kotey *et al.* 1998).

"Diktat" Phase (mid 1950s to the early 1990s)

Ghana gained its independence from Britain in 1957. Ghana's new government believed forest management would be better overseen by the central government instead of the traditional landowners and as such the government took formal control of Ghana's forests "in trust" for the traditional land owners. Policies of the 1960s transformed the forest industry from an industry run primarily by a small number of foreign owned companies into an industry predominated by a large number of local companies. The notion was formed that the forest industry be used as a vector to drive the nation's development. As a result royalties charged to the forest industry were kept low to encourage the rapid development of the industry (Kotey *et al.* 1998).

As the forest industry grew, it began looking at off-reserve forest areas as a source of timber to supply their mills. At the time extensive forests existed in off-reserve areas in southwestern Ghana. The government introduced Protected Timber Lands in these areas to appease the forest industry. The areas had traditionally been owned by communities yet few people inhabited the areas. Local people became concerned that the government was establishing the Protected Timber Lands in order to eventually turn their traditional lands into forest reserves and as such began moving in and occupying the areas. The influx of people placed considerable stress on the forests and resulted in serious conflicts as the government tried to evict the newly established

farmers from the area. These conflicts resulted in a legacy of mistrust between local people and government (Kotey *et al.* 1998).

In the 1980s Ghana experienced serious economic issues which eroded social services and lead to increased poverty in rural areas. Support from donor countries focused on injecting new life into the forest industry to help improve Ghana's economic condition. At the time however the forest resource was in a precarious situation and forest management institutions were inadequately equipped to oversee the management of Ghana's forests. As a result many forest reserves became degraded, the annual allowable cut was not representative of the estimated sustainable yield, and some major timber species were facing commercial extinction. At the end of the 1980s the local landowning communities had been alienated from their forest resources as a result of their exclusion from forest management (Kotey *et al.* 1998).

Collaborative Phase (1994 to today)

The forest management crisis at the end of the 1980s spurred a re-evaluation and re-examination of the state of Ghana's forests and forest management. The Ministry of Lands and Forestry actively pursued the coordination of donor funding to improve forest management (in the past much donor support was aimed at improving the forest industry, not strengthening Ghana's forest institutions to oversee forest management) (Kotey *et al.* 1998).

Policies during the collaborative phase have focused on decreasing the annual allowable cut, temporary bans on the export of round (*i.e.*, unprocessed) logs and improved collection of royalties (Kotey *et al.* 1998). The Forest and Wildlife Policy of 1994 focuses on the sustainable management of the forest resources. Initiatives are being undertaken to transform the forestry industry from an oversized industry with numerous inefficient mills, to a lean industry based on value added processing to increase the benefits Ghana accrues from its forest resources. Policies developed during the current phase focus on the importance of providing local communities, the true resource owners, with a much increased role in managing their forest resources.

## FOREST AND WILDLIFE POLICY (1994)

The Forest and Wildlife Policy of 1994 was created to succeed the Forest Policy of 1948. At its time of inception, the Minister of Lands and Forestry; Dr. Kwabena Adjei, suggested the Forest and Wildlife Policy was needed due to the significant changes that had occurred in Ghanaian forests since 1948. The changes included a large reduction in forested area combined with the growing outcry, of both local and international communities, over environmental issues (Forest and Wildlife Policy 1994).

Formulation of the Forest and Wildlife Policy began in 1989 with a symposium initiated by The Forestry Commission (FC) to facilitate the consultation process. Thirty organizations were represented at the symposium including: public forestry institutions,

forest industry, universities, the Ministry of Agriculture, the Lands Commission, Fire Services, the Tourist Board, the National Energy Board, the Environmental Protection Council, and several local and foreign non-government organisations (NGO's). While several organizations were consulted during formulation of the Policy traditional rulers, landowners, and farmers were not adequately represented. Only one person from the traditional rulers/landowners group attended – although more than one person was invited – and no farmers or members of forest fringe communities were present at the conference (Kotey *et al.* 1998).

Overview

The overall aim of the Forest and Wildlife Policy is to ensure the "conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society" (Forest and Wildlife Policy 1994). The policy document states the overall aim will be achieved through the realization of certain objectives. The objectives include:

- managing and enhancing Ghana's permanent forest and wildlife resource;
- developing an efficient forest industry based mainly on secondary and tertiary processing;
- promoting public awareness and the involvement of rural people in forest and wildlife conservation;

- promoting research-based, and technology-led, forestry and wildlife management; and
- developing the effective capability required for sustainable forest management.

The policy described strategies to achieve the objectives. The strategies form the backbone of the policy with the overall success of the policy depending on whether appropriate strategies were selected and if the strategies are implemented effectively at the ground level. The main strategies are discussed in detail in the following section. A copy of the Forest and Wildlife Policy of 1994 is contained in Appendix I.

Strengths of the Forest and Wildlife Policy

The Forest and Wildlife Policy of 1994 is a solid policy document. It raises some very important realizations, not adequately addressed in previous policies, and provides good strategies to achieve the Policy's overall objective. The realizations, arguably the three greatest strengths of the Forest and Wildlife Policy, involve:

- Ghana's viability as a nation is inextricably linked to the health and integrity of the forest resource;
- the importance of shifting towards sustainable forest management to ensure the health of the forest resource; and
- the importance of increasing the interest and involvement of local people in forest management to ensure sustainability.

The Policy's main strategies to achieve the overall objective of the conservation and sustainable development of the nation's forest and wildlife resources include: increasing the involvement of local people in forest management, improving the forest industry, institutional strengthening, and sustainable forest management.

## Increasing the Involvement of Local People in Forest Management

A major strength of the Forest and Wildlife Policy of 1994 is its strategy of increasing the involvement of local people in managing the forest resource. The present state of Ghana's forest resource is dismal: the majority of off-reserve forests have been liquidated and those forests found within reserves are severely degraded (Hawthorne and Abu-Juam 1995). While the degradation of Ghana's forest reserves can be attributed to several agents, namely; commercial forestry, Ghanaians' heavy reliance on fuelwood as an energy source, shifting cultivation, and bushfires, an underlying cause of the degradation is the removal of local people's rights to access forest reserves.

The removal of local people's rights to forest reserves, combined with the fact local people receive few to no benefits from forestry activities, has led to the outright alienation of local people (Inkoom 1999). Today, since local people no longer have a stake in forest reserves, most are indifferent about protecting them. The lack of local interest combined with the weak institutional capacity of the Forest Services Division, allows illegal logging, bushfires, and shifting cultivation to erode the integrity of forest

reserves virtually unchecked. Getting forest fringe communities back into the process will be extremely beneficial in helping protect forest reserves, as local people were very effective in overseeing forestry operations prior to the centralization of forest management (Kotey *et al.* 1998). In reality the FSD will most likely be unable to effectively protect forest reserves until local communities are brought into the process.

The Forest and Wildlife Policy states the government will "place particular emphasis on the concept of participatory management and protection of forest and wildlife resources and will seek to develop appropriate strategies, modalities and programmes in consultation with relevant agencies, rural communities and individuals" (Forest and Wildlife Policy 1994). While the policy document highlights the government's commitment to participatory management as being serious, very little detail is provided as to how the strategy will be achieved and incorporated into forest management in the country. Instead the policy's strategy towards participatory management floats around wording such as "the government wishes to increase public awareness and people's involvement in conservation of forest and wildlife resources" (Forest and Wildlife Policy 1994). The closest the document comes to actually providing a strategy to implement participatory management is by suggesting a dialogue "with all interests through a national advisory forum [*i.e.,* the Forest Commission]...to ensure active public participation in forestry and wildlife matters" (Forest and Wildlife Policy 1994).

The Ministry of Lands and Forestry is encouraging its implementing agencies to increase the involvement of local people and pursue collaborative management; the

Ministry's own commitment appears to be lacking however. At the time of the Forest and Wildlife Policy's inception the Minister of Lands and Forestry stated all relevant forestry stakeholder groups had been proactively involved in all stages of the policy's formulation (Forest and Wildlife Policy 1994). As noted earlier this was not the case. If Ghana's Ministry of Lands and Forestry does not take collaboration with people at the community level seriously in its policy development, how can it expect government agencies to involve people from forest fringe communities in the management of forest reserves?

Another challenge associated with increasing the involvement of local people is the Forest Services Division's concept of collaborative management. In speaking of participatory management, the Collaborative Forest Management Unit of the FSD defined collaboration as "any form of interaction between local people and the Forestry Department which enhances the management of the resources and improves the flow of benefits to local people" (CFMU 1993). The definition seems conveniently flexible. Increasing benefits provided to forest fringe communities will definitely be beneficial in increasing local people's interest in maintaining the integrity of forest resources, strategies need to be taken a step further however, namely involving local people in decision-making at the management level. As Kotey *et al.* (1998) suggest "stakeholders who are passive onlookers in decision-making will not contribute their skills and resources."

A major obstacle complicating the shift to collaborative management and providing a greater share of the benefits, accrued from forestry operations, to forest

fringe communities involves the structural arrangement of the FC. The Forestry Commission was established as a corporate body under The Forestry Commission Act, Act 571 of 1999. The reorganized FC is to be run as a financially self-sustaining company. The notion behind the reorganization was to encourage the Commission to become more efficient in terms of the use of personnel and resources involved in managing forest and wildlife resources. The FC's Service Charter (Forestry Commission 2001) states the FC was created to achieve policy objectives of the Forest and Wildlife Policy of 1994. A commission faced with becoming financially self-sustaining is unlikely to hand over aspects of forest management along with a greater proportion of financial benefits to local communities when the Commission itself is in desperate need of funds to ensure its survival.

Increasing the level of collaborative management involved in managing the forest resource and increasing the interest of local people is not an easy task; progress is being made however. The creation of a Collaborative Forest Management Unit (CFMU) within the FSD is a major step in the right direction. The CFMU, created with the assistance of the United Kingdom's Department for International Development (DFID), is developing measures to increase the involvement and interest of local people in forest management related activities.

A strategy being developed which shows great potential to increase the benefits provided to local people is the provision of Social Responsibility Agreements (SRA's). SRA's improve the relationship between timber contractors and landowning communities, by formalizing benefits provided by the contractor to the landowning

community as a form of payment for the right to use their resources (Kotey *et al.* 1998). Social Responsibility Agreements are not a new idea; in the past they were very arbitrary in nature and resulted in many problems. Agreements ranged from one extreme – communities insisting on unreasonably large demands, such as the provision of a hospital, to the other extreme – contractors providing a pittance to the community, such as the concession of a few goats and some gin for an upcoming festival in the community [Abeney (pers. comm., 12 August 2002)][3]. The arbitrary nature of SRA's is being removed under the Timber Resources Management Act (act 547) of 1997 and the Logging Manual for Ghana of 1998. The improved SRA's entails the contractor providing the community with a form of infrastructure, such as a school, paving a road, or providing scholarships for the community's children.

The success of the improved SRA's will depend on how effective a role the FC plays in moderating negotiations between contractors and local communities. The FC will also play a vital role in ensuring the SRA is in place prior to the commencement of harvesting operations. Discussions with senior staff in the FSD suggests they have not been able to effectively moderate the consultation process to date. The concept is catching on however. In several circumstances communities have not allowed contractors to commence operations in their area until the SRA has been honoured [Abruquah (pers. comm.., 27 August 2002)][4]

[3] Dr. Abeney is a lecturer with the Institute of Renewable Natural Resources (IRNR) at the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi.
[4] Mrs. Edith Abruquah is a Regional Manager with the FSD.

Bringing local people into the process in this manner is beneficial as local people who benefit from forestry operations will be interested in maintaining the integrity of the forest resource. As an advisory committee of the Food and Agriculture Organization of The United Nation's suggested "for local people, it is only when the forests have real value to them will they see the need to co-operate in efforts to protect and manage the forest" (FAO 1997). In addition to contributing to sound forest management decisions, bringing local people into the process would essentially re-establish the "traditional authorities system of spies" (Kotey *et al.* 1998) which has proven itself very effective at monitoring and regulating activities being carried out in their forests. Another benefit of the SRA strategy is that the benefits are furnished by the logging contractors, not the financially strapped FC.

Improving the Forest Industry

The Forest and Wildlife Policy of 1994 states the timber industry needs to be transformed from a "high volume, low value business to a low volume, high value trade based on sustainable forest management." Forest fees and taxes are recognized as vectors to encourage more efficient use of the resource and a shift towards producing products of higher value for export. A shift to value added processing is a good idea, potentially allowing more benefits (economic and social) to be gained from a smaller volume of wood. Decreasing the volume of wood required by the forestry industry can potentially decrease the amount of stress placed on Ghana's forests by reducing the levels of commercial logging activities.

The potential benefit of value added processing in Ghana's current wood industry is shown below. Table 12 summarizes sectors of the wood industry in terms of intake volume, employment, and revenue as percentages of the total wood industry. Saw mills, considered secondary processing, take in over half (55.1 %) of the total volume of wood consumed by the wood industry, create approximately one-fifth (18.9 %) of total employment, and generate 34.4 percent of the wood industry's total income.

**Table 12. Comparison of revenue, intake, and employment by Ghana's wood industry sector (developed using vales from Birikorang *et al.* 2001)**

| Wood Industry Sector | Intake | Employment | Revenue |
|---|---|---|---|
| Saw Mills | 55.1 | 18.9 | 34.4 |
| Sliced Veneer | 7.5 | 1.7 | 8 |
| Rotary Veneer/ Plywood Mills | 23.1 | 6.7 | 19.2 |
| Tertiary | 14.3 | 72.7 | 38.5 |
| Total | 100 | 100 | 100 |

The situation is reversed when tertiary processing operations (e.g., furniture and door production) are examined. The tertiary processing sector of Ghana's wood industry takes in less than a fifth (14.3 %) of the total volume of wood consumed by Ghana's wood industry, yet is responsible for nearly three-quarters (72.7 %) of all employment, and generates slightly more revenue (38.5 %) than the saw milling industry. To summarize, tertiary processing generates several times more jobs and revenue off a much smaller volume of wood than other sectors of the wood industry. The numbers are relatively simple, yet they illustrate an important point: a shift in Ghana's wood industry to a greater volume of wood used to produce value added products will likely allow the industry to generate more employment and revenue off a smaller volume of wood.

A tour through the Anloga wood working area in Kumasi reveals a significant proportion of Ghana's tertiary wood processing is carried out by small-scale entrepreneurs. Products produced from such operations are sometimes not of suitable quality for export, many high quality wood products are made in Ghana however. Much emphasis will need to be placed on increasing the quality of tertiary processing if Ghana is to be successful in shifting the forest industry towards tertiary processing for export. Institutions, such as the Forest Research Institute of Ghana and the Wood Industries Training Centre, have been established to promote the development of such businesses (FORIG 1998; ITTO 1997).

The importance of value added processing is well recognized in the Forest and Wildlife Policy of 1994; people interviewed in the forestry sector agreed steps taken to promote value added processing have proven largely ineffective however. Average values of Ghana's wood exports (Table 13) show no significant increases in the value accrued from exports since 1994. In reality the average value of exports in cubic metres has actually decreased since 1994, suggesting strategies implemented to promote value added processing are proving rather ineffective.

**Table 13. Average Value of Ghana's Exported Wood Products in US Dollars per cubic metre (table modified from Birikorang *et al.* 2001)**

| 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|
| $417.56 | $408.40 | $395.68 | $390.14 | $411.37 | $401.23 |

The main change that has occurred toward value added processing since the Forest and Wildlife Policy's inception has been a shift from the production of air-dried lumber to kiln-dried lumber. Producing greater amounts of kiln-dried lumber is a step down the path to value added processing, and the increased quality of tertiary processing will require kiln-dried lumber, the shift however does not generate much more revenue than air-dried lumber. The average price of kiln-dried lumber was $373 US per cubic metre in 1999 compared to $359 US per cubic metre for air dried lumber. The shift to kiln-dried lumber resulted in an increased value of approximately four percent, yet the cost of producing kiln-dried lumber is roughly $40 US more per cubic metre than air-dried lumber. The Forest Products Inspection Division (FPID) of the FC also places a $66 US premium on the export of kiln-dried lumber (Birikorang *et al.* 2001). The relatively small increase in value associated with kiln-dried lumber, combined with increased cost and premiums charged by the FPID raises the question of the validity of such a shift. Initiatives to encourage value added processing need to be taken a step further to focus on promoting the production of products of greater value.

Disincentives to value added processing

Several factors exist in the Ghanaian wood industry acting as disincentives to a shift to value added processing. A major disincentive involves the current overcapacity of the wood industry at roughly five times the nation's AAC. The problem of overcapacity is well understood in Ghana yet steps taken to rectify the situation have proven futile. In reality the capacity has continued to expand seemingly unchecked since the inception of the Forest and Wildlife Policy in 1994. In 1997 the capacity of the wood industry was estimated to be 3.7 million cubic metres, roughly three and a half times the nations AAC. As of 1999 the milling capacity had increased to 5.1 million cubic metres. An underlying cause of the overcapacity is the wood industry's assumption the FC will be unable to enforce harvesting controls; allowing industry to acquire wood one way or another (Birikorang *et al.* 2001).

The total log harvest (3.72 million cubic metres) is far greater than the AAC (1.01 million cubic metres), yet it is well below the industry's total milling capacity of 5.1 million cubic metres. A supply of lumber (3.72 million cubic metres) below demand (5.1 million cubic metres) creates uncertainty amongst wood processors as they are unsure of being able to acquire enough raw resources to supply their mills. Table 7 illustrates the potential benefits of shifting to value added processing, yet few companies are likely to invest the capital required for such a shift when they are uncertain of being able to acquire enough of raw resources to run their operations. Reducing the overcapacity of Ghana's milling sector – while not an easy task – is crucial to increasing

value added processing in Ghana's wood industry. The decommissioning of inefficient mills is discussed in greater detail in upcoming sections.

Another obstacle to value added processing involves the relatively low cost industry is charged for the right to use the resource. Charging dismally low stumpage fees (the value placed on standing timber) serves as a disincentive to value added processing as it allows companies to continue earning substantial returns while selling products which have undergone little processing. The Forest and Wildlife Policy recognizes the importance of ensuring a proper value is placed on the resource and suggests the "regular review of forest and wildlife fees to reflect the economic value of the resource and to recover optimum revenues for supporting the cost of sustainable resource management and development." The amount charged to companies for the right to harvest the resources has historically been quite low however (Birikorang *et al.* 2001).

The wood industry is an extremely powerful lobby group in Ghana. Since the mid 1960s companies have lobbied the government pushing the concept that the wood industry's activities were very beneficial to national development. The notion was widely accepted and subsequently incorporated into policy and planning. Forest fees were kept low to encourage forestry operations, with the belief they would in fact assist in the country's development.

Today, forest fees remain low as does the success rate of Ghana's institutions in collecting fees. In the mid 1990s levies charged in West African countries tended to

range from $1.50 US to $4.50 US for each cubic metre of wood harvested, stumpage fess in Asian countries were more than double that, averaging $10 US per cubic metre of wood harvested (FAO 1993). Poor collection success rates compound the issue of low forest fees. In 1999 only 42 percent of stumpage owed was actually collected (Birikorang *et al.* 2001). The poor success with which forest fees were collected is likely attributable to several factors such as an understaffed and under-equipped FSD, and a collection system in which forestry companies were permitted to remove logs from the forest prior to paying royalties (Kotey *et al.* 1998).

Forest fees should be re-examined on a regular basis to ensure they reflect the true value of the resource. A study should be undertaken to compare Ghana's stumpage rates with those charged in other countries. The study should also examine industry production costs and revenues to determine whether an increase in stumpage costs would be detrimental to Ghana's wood industry.

If carried out in a careful manner, increasing forest fees could be used as an effective economic tool. Greater stumpage costs would reduce company profit margins and would therefore be likely to encourage companies to look into improving their efficiency in terms of the use of raw resource. Companies might also shift to value added processing as they would be unable to make good profits off lower value products given the increased production costs arising from more expensive forest fees. Increased stumpage fees may also help perpetuate forests by: changing the perception of the company in terms of the value of the forest and hence the value of renewing the forest as

well as providing increased income to the Forestry Services Division for renewal, tending, and protection activities.

Institutional Strengthening

Increasing the capacity of institutions involved in forest resource management is crucial to ensuring the sustainability of the forest resource. The government's inability to manage forest resources has been illustrated through an analysis of Ghana's forest management (Mayers *et al.* 1996) and is recognized at top levels of government (Kotey *et al.* 1998). The Forest and Wildlife Policy recognizes the government's ineffectiveness at managing the resource and provides strategies to strengthen government institutions.

The main strategy involves the "reorganisation of Forestry and Wildlife Departments, as autonomous or semi-autonomous agencies, to focus on upgrading of staff performance and improved monitoring, coordination and accountability" (Forest and Wildlife Policy 1994). The strategy was put into effect with the passing of The Forestry Commission Act (Act 571 of 1999), which reorganised the Forestry Commission, to "bring under the Commission the main public bodies and agencies implementing the functions of protection, development, management and regulation of forests and wildlife resources and to provide for related matters." The FSD, Wildlife Division, Timber Export Development Division, and Forest Product Inspection Division have been brought under the management of the FC, however it is too early to judge if the restructuring has benefited forest resource management in Ghana.

Sustainable Forest Management

Managing Ghana's forest resources in a sustainable manner is the underlying theme of the Forest and Wildlife Policy of 1994. A strategy contained in the Policy which will undoubtedly be of great benefit in Ghana's transition towards sustainable forest management involves the strategy presented in section 5.3.5 namely the award of timber rights based on a competitive bidding process. The Forest and Wildlife Policy suggests the introduction of a competitive procedure for allocating timber rights would eliminate unnecessary speculators, thus ensuring the access of capable and properly equipped processors and entrepreneurs to a sustainable resource. The initiative is discussed in greater detail in the Timber Resources Management Act and Amendments section.

Weaknesses of the Forest and Wildlife Policy

The Forest and Wildlife Policy is a good policy however it has its weaknesses. Shortcomings of the Forest and Wildlife Policy include: difficulties in implementing strategies contained in the Policy, a narrow scope, a lack of emphasis placed on improving logging activities, and a questionable level of commitment to protecting wildlife resources.

Difficulties Implementing Policy Strategies

The main weakness associated with the Forest and Wildlife Policy, is not a weakness of the Policy *per se*, it involves the implementation of strategies contained in the policy document, that is from words on paper to action in the field. The main obstacle associated with implementing the Forest and Wildlife Policy appears to be the weak institutional capacity of Ghana's forest management institutions. The weak institutional capacity is due to a lack of funds and the subsequent equipment and personnel shortages to oversee forest management in Ghana. Hopefully the recent restructuring of the Forestry Commission will prove effective in helping strengthen Ghana's forestry institutions. Examples of good strategies contained in the Policy that have not been effectively implemented include: the decommissioning of inefficient mills in Ghana to reduce the milling capacity, a shift to value added processing, and increasing the involvement of local people in forestry related activities through collaborative management.

The Collaborative Forest Management Unit (CFMU) of the FSD has good ideas to increase the involvement of local people in forestry activities, yet steps taken to implement the ideas are occurring too slowly. The passing of the Forest and Wildlife Policy in 1994 signaled the governments support for collaborative management. Today, nine years later, collaborative management projects are still at the experimental pilot phase. As the FSD experiments with collaborative management, the state of Ghana's forest resource continues to deteriorate at an alarming rate. The effort placed on

implementing collaborative management needs to be increased perhaps by increasing the resources and power of the FSD's Collaborative Forest Management Unit.

Narrow Scope of the Forest and Wildlife Policy

A major weakness of the Forest and Wildlife Policy is its narrow comprehension of the agents degrading Ghana's forests. The policy document focuses primarily on commercial logging operations as being the main agent affecting the health of Ghana's forests. Inadequate attention is given to other key agents responsible for forest degradation such as bushfires and Ghanaians heavy reliance on fuelwood, both factors – often originating outside the reserves – have a tremendous effect on the health of Ghana's forests yet go virtually unmentioned in the Policy.

Evidence exists suggesting commercial logging practices are facilitating the spread of bushfires deeper into the forest zone by opening the tree canopy and drying out the forest floor (Hawthorne 1994). The omission of the serious effects of bushfires in forest degradation, and the effect of commercial logging activities in facilitating the spread of bushfires into forests, is a major shortcoming of the Forest and Wildlife Policy. Bushfires management must be a top policy priority if Ghana's forests are to be managed on a sustainable basis. Forest management needs to be modified in high risk bushfire areas. Buffer zones should be created in the peripheral zone of forests in high risk areas. In such areas commercial logging activities would not be permitted – or would be permitted at much lower intensities – to minimize the potential spread of bushfires into the forest.

The issue of fuelwood is major as it places tremendous stress on Ghana's forest resources. Unfortunately the demand for fuelwood is unlikely to subside, rather it is likely to continue to grow with Ghana's growing population. Steps are being taken to reduce Ghana's population growth rates however a substantial decrease in the population growth rate will not occur overnight. Initiatives have been undertaken to promote the substitution of alternative energy sources (*e.g.*, liquefied petroleum gas) in an effort to decrease the pressure placed on Ghana's forest resources. Initiatives included the distribution of gas cylinders free of charge and also subsidizing gas prices. The initiatives were beginning to prove effective as people began using gas, however the subsidies were terminated as Ghana could not afford the expense associated with importing gas from other countries. As the subsidies disappeared the use of gas has been frustrated by the current high costs (FAO 2001).

New initiatives are needed to decrease the pressure fuelwood consumption places on Ghana's forest resources. The initiatives should come from within Ghana in order to ensure they can be sustained over the long term. An effective local initiative involves encouraging the establishment of locally operated small-scale plantations to supply fuelwood. These plantations would be beneficial as they would help decrease the pressure placed on Ghana's forest resources while creating small business opportunities for people living in rural areas. Effective initiatives to encourage small-scale plantations would include the provision of small-scale loans to assist in the establishment of plantations as well as assisting local people in obtaining tree seedlings.

No Emphasis Placed on Improving Logging Activities

An underlying strategy of the Forest and Wildlife Policy is to try and derive more from the forest while decreasing stress placed on the resource. A shift to value added processing is encouraged to decrease the demand placed on forests, yet no thought is given to improving logging techniques to reduce damage done to the forest. The omission of improved logging operations is very unfortunate as selection logging activities in tropical regions often result in considerable damage to the forest, subsequently reducing the forest's future timber production (Ewel and Conde 1980).

Ghana's logging manual, which prescribes a code of timber harvesting practices all holders of timber utilization contracts must adhere to, makes little or no mention of reduced impact logging practices. The closest the logging manual comes to encouraging reduced impact logging is in stating "trees to be felled are to be directed towards skid tracks or canopy openings so that they cause minimum damage to surrounding trees" (Ghana Forest Service 1998).

Reduced-impact logging practices have proven effective in other parts of the world as a means of decreasing the effects of logging on the residual forest which in turn has the potential to increase forest productivity. A reduced-impact logging project carried out in Malaysia resulted in decreased soil disturbance as well as significant reductions in the number of residual trees damaged and killed during logging operations. Logging operations were improved using five basic steps: improved pre-harvest planning, vine cutting, directional felling, improved winching and skidding, and logging

area closure (Pinard *et al.* 1995). While more time consuming and expensive than traditional systems, the decreased damage done to the forest and subsequent increase in post-logging production makes the implementation of reduced-impact logging systems well worth while. The FSD should work toward developing a reduced-impact logging system applicable to Ghana's forests.

Another way of getting more out of existing forests while minimizing the effect on the residual forest is by encouraging the extraction of Non-Timber Forest Products (NTFP). The Forest and Wildlife Policy suggests promoting "the development of viable and efficient forest-based industries, particularly in secondary and tertiary processing, so as to fully utilize timber and other products from forests". The idea of utilizing other forest products is raised in the Policy yet very little emphasis is placed on NTFP's.

Non-timber forest products are an important aspect of the lives of the 500 million people who live near tropical rainforests (CIDA 1992). The huge diversity of species in Ghana's Forest Zone – over 2,100 plant species – suggests a tremendous potential for commercial harvesting of NTFP's in Ghana's forests. The Forestry Commission should be actively promoting research into Ghana's NTFP's. If properly managed NTFP's could likely be harvested from Ghana's forests on a commercial scale, while doing little damage to the residual forest.

The Forest and *'Wildlife'* Policy?

While the name: the Forest and Wildlife Policy suggests the document places considerable emphasis on wildlife, after reading the policy it seems the wildlife component was added as an afterthought; as though someone had gone through the document appending '– and wildlife' each time forest resources were mentioned. The apparent lack of sincerity pertaining to the management of Ghana's wildlife resource is very unfortunate due to the biological importance of wildlife and the significant role of bushmeat (a term used in Ghana to describe wild animals hunted for food) in the lives of many Ghanaians. Bushmeat is consumed regularly by 75 percent of Ghanaians (Asibey 1986) and is the main source of meat for 80 percent of the rural population (Asibey 1987).

Through six years of formal forestry education in Canada the author has gained an appreciation for the role forest management activities play on forest animal populations. In the Canadian province of Ontario forestry operations carried out on public lands abide by harvesting guidelines to ensure the provision of habitat for key indicator species. Based on this type of education which examines forestry activities carried out with the intention of maintaining and/or creating habitat conditions of benefit to animal species, it is surprising to see how Ghana's forest management and wildlife management activities are carried out as independent entities. While forest conditions and forest management activities differ greatly between Ghana and Canada, surely logging activities in Ghana have a tremendous effect on wildlife species. The working

relationship between Ghana's Forest Services Division and Wildlife Division should be strengthened to examine the potential of modifying forest management activities, making them more conducive to generating conditions of benefit to Ghana's wildlife populations.

Recommendations

The following actions should be undertaken to facilitate the realization of objectives contained in the Forest and Wildlife Policy of 1994:

1) Incorporating local people into the forest management process (through collaborative management) needs to be taken more seriously.
    a) The Ministry of Lands and Forestry should lead by example and involve local forest fringe communities in the formulation of forest policy.
    b) The Collaborative Forest Management Unit of the FC should be strengthened to accelerate the implementation of collaborative management.
2) The Forest and Wildlife Policy failed to recognize bushfires and Ghanaians heavy reliance on fuelwood as being crucial causes of forest degradation. Future forest policy needs to be more comprehensive, providing strategies to mitigate all major underlying causes of forest degradation.
3) Initiatives must be taken to encourage the establishment locally operated commercial plantations to supply fuelwood. Not only would these plantations be beneficial as they would help decrease the stress placed on Ghana's forest resources, they would also provide small-business opportunities for people

living in rural areas. Effective initiatives include the provision of small-scale loans to assist in the establishment of plantations as well as assisting local people in obtaining tree seedlings.

4) The following improvements should be made to forest management:

   a) Bushfires prevention strategies should be developed and incorporated into forest management planning practices. A key strategy would involve creating no harvest – or reduced harvest – buffer areas around the peripheral zone of forests located in areas with a high risk of bushfires.

   b) The FSD should develop and implement a reduced impact logging system tailored to Ghana's forests.

   c) The working relationship between the FSD and Wildlife Division should be strengthened to facilitate the development of forest management activities that are more conducive to generating conditions favorable to Ghana's wildlife populations.

5) Implement initiatives to encourage value added processing, such as:

   a) the removal or reduction of premiums charged on the export of value added products;

   b) assist companies in obtaining interest free, or low interest loans to facilitate the acquisition of tertiary processing equipment;

   c) reduce the overcapacity of Ghana's wood industry; and

   d) increase stumpage costs to reflect the true value of the resource.

6) Initiate research and feasibility studies to examine the potential of exporting NTFP's from Ghana's forests.

## THE TIMBER RESOURCES MANAGEMENT ACT AND AMENDMENTS

The Timber Resources Management Act of 1997 (Act 547), the associated regulations; the Timber Resources Management Regulations (L.I. 1649) 1998, and the Timber Resources Management (Amendment) Act of 2002 (Act 617) are pieces of legislation created to implement strategies proposed by the Ministry of Lands and Forestry in the Forest and Wildlife Policy of 1994. An important strategy proposed in the Forest and Wildlife Policy involved the allocation of timber rights through a competitive bidding process. The Timber Resources Management Act and its amendments set the legislative framework for the competitive bidding process.

### Timber Utilization Contracts

Under the Timber Resources Management Act, a company must enter into a contractual agreement, called a Timber Utilization Contract (TUC), before it can harvest any wood (Timber Resources Management Act 1997). Companies must submit applications to the Forestry Commission to obtain a Timber Utilization Contract. The application contains the following information:

- a harvesting plan for the area in question;

- an assessment of, and a plan to deal with, any potential environmental effects of the harvesting operations;
- evidence of the company's financial and practical capability of carrying out the proposed operation;
- proposals to address social needs of communities who have an interest in the area; and
- any other relevant information desired by the FC.

The FC provides TUC applications to the Timber Rights Evaluation Committee (TREC) who, as the name suggests, are charged with evaluating the TUC applications. The Committee comprises:

- the Chief Conservator of Forests or a suitable representative;
- the Planning Officer of the Forestry Department;
- the Chief Administrator of the Commission;
- the Administrator of Stool Lands;
- the Lands Commission representative on the FC;
- a representative of the Ghanaian Institute of Professional Foresters; and
- another person appointed by the Minister.

The Timber Rights Evaluation Committee evaluates the TUC applications and ranks the applicants based on their merit, through a competitive procedure. An evaluation report is prepared by TREC for the FC. The FC then forms a recommendation, based in part on the TREC report. The FC passes its recommendation,

along with the TREC report, to the Minster of Lands and Forestry. The Minister is then responsible for making the final decision and grants timber rights by entering into a TUC with the company on behalf of the President. Timber Utilization Contracts specify the following:

- the physical land area involved and the time period of the contract;
- prescriptions, as instructed by the FC, that the contract holder must adhere to;
- a reforestation plan that must be carried out –to the satisfaction of the Chief Conservator of Forests– during the contract period;
- the amount of payment for rent, royalties and other compensation;
- a periodic review of the TUC holder's operations by the FSD;
- a five year plan for the contract area, prepared by a professional forester in accordance with the Logging Manual, and submitted to the FSD; and
- the grounds on which the contract can be suspended or terminated.

Timber Utilization Contracts cannot be transferred between companies without the approval of the Minister of Lands and Forestry and an evaluation by the TREC. The Act also states a TUC shall not be entered into unless the organization has the ability to have at all times a manager who is a professional forester to oversee operational activities.

The Act prescribes prison sentences, fines, and the seizure of equipment as penalties for people who fail to abide by provisions of the Timber Resources Management Act. The specific penalty depends on the nature of the violation. Any

person charged with managing or protecting a forest resource through employment with a government institution who facilitates the breach of any provisions of the act or works with anyone who breaches the act, commits an offence. On summary conviction of such an offence the person is liable to imprisonment for a term of six months to two years with no option of paying a fine in lieu of prison time. The same penalty can be applied to any person who: harvests timber without a valid TUC, operates a vehicle to transport timber harvested in contravention of the Act, offers for sale or buys timber harvested in contravention of the Act, stocks illegal timber, or carries/hauls timber harvested in contravention of the Act using non-mechanical means (Timber Resources Management Act 1997).

In addition to prison terms, people who violate the Timber Resources Management Act may also be subject to fines. People who harvest timber, or who transport timber that was harvested without a valid TUC can be fined for up to 1000 percent of the market value of the timber. People who: offer to sell, sell, store, or buy timber harvested in contravention of the Act, are liable to fines of up to 500 percent of the market value. Those who transport illegal timber using non-mechanical means can be fined up to 100 percent of the market value of the timber involved in the offence. Furthermore, any vehicles or equipment used in illegal timber harvesting operations can be confiscated and sold by the State (Timber Resources Management Act 1997).

The Timber Resources Management (Amendment) Act, Act 617 of 2002 expanded applicable penalties making the owners of any equipment or vehicles used in illegal harvesting operations (even if the owners themselves were not physically

involved in the illegal operations) liable, on summary conviction to, prison terms. Other amendments included in Act 617 involve: the exclusion of private forest plantations from the TUC process, setting a maximum time limit on the duration of TUC's, setting a maximum limit on the amount of area permitted to be covered in a TUC, and the provision of benefits for investors in the forest and wildlife sectors (Timber Resources Management (Amendment) Act 2002).

Analysis

Granting timber rights through Timber Utilization Contracts based on a competitive bidding process, is an excellent idea that will undoubtedly be of great benefit to the Ghanaian forestry sector. The competitive bidding process will likely result in higher resource prices leading to increased revenue for government institutions and local people while helping transform Ghana's wood industry. The main adjustments likely to occur in the wood industry involve improved resource utilization rates and a reduction in milling capacity.

The introduction of competitive bidding as the mechanism for assigning timber rights will lead to increased inter-company competition, resulting in greater resource costs. As resource costs increase companies will have to start improving their operations to maintain their competitiveness in the marketplace. Two main improvements companies are likely to work toward include improving resource recovery rates (*i.e.*, improving the efficiency with which companies convert resources into

products) and shifting to producing products of greater value. Both improvements will be beneficial to the forest sector as fewer resources are required subsequently potentially decreasing the pressure on Ghana's forests.

Increasing the cost of standing timber will also likely help curtail the current overcapacity of mills; a major problem plaguing the forest industry. The problems associated with the overcapacity of Ghana's timber milling industry (discussed in detail earlier in the thesis) are well understood at the highest levels of the Ministry of Lands and Forestry, unfortunately no action is being taken to reduce the milling capacity through the closure of inefficient mills. The reason for the inaction is most likely due to the fact no government likes closing down companies and putting people out of work. The implementation of TUC's and the associated increase in resource costs provides the government with an excellent opportunity, essentially enabling them to decommission mills without receiving any blame for the closures. As wood prices increase less efficient companies will be unable to compete with the more efficient companies and will gradually be forced from the industry.

The Timber Resources Management Act put forth a fairly solid process to oversee the introduction of TUC's in Ghana, however the first attempt to implement TUC's failed. In November of 2000 the Government of Ghana (then the National Democratic Congress (NDC) under the Presidency of J.J. Rawlings) approved 42 timber utilization contracts for 30 companies (Dauda 2002). In June of 2002 the Cabinet (the New Patriotic Party government under the Presidency of J.A. Kuffour), on the recommendation of the Minister of Lands and Forestry Kasim Kasanga, approved the

cancellation of the TUC's (Kasanga 2002). The Government justified termination of the TUC's as they thought the previous government assigned the concessions on a political basis rather than on principles contained in the Timber Resources Management Act.

The validity of cancelling the TUC's was being debated during the research period. The Ghanaian Government is issuing Timber Utilization Permits (TUP's) as an interim measure to allow companies to continue harvesting while the TUC issue is rectified. In issuing TUP's for commercial activities, the Ministry of Lands and Forestry is acting in contravention of the Timber Resources Management Regulation (L.I. 1649) of 1998; which states TUPs can only be used to produce lumber for social or community purposes; they cannot be sold or exchanged.

The competitive bidding aspect of the TUC process must be solved and successfully implemented in the field to enable the economic restructuring of Ghana's timber industry to take place. A strong and efficient forest industry will be beneficial in perpetuating healthy forests in Ghana.

The competitive bidding aspect of the process could be taken a step further; having the forest companies bid on a volume of standing wood through a public auction rather than bidding on a concession area. The system would require detailed forest inventories to provide the volume (by species type) a particular forest area could provide in the next harvest. Once the volume was determined a public auction could be held where forest companies could bid on the yet un-harvested wood. The benefit of this system is it allows the Ministry of Lands and Forestry to have a form of bargaining

power; if the prices were too low the Ministry could decide to leave the trees standing and open up the bidding at another time in the future[5].

Reducing Illegal Chainsaw Operations

The Timber Resources Management Regulations (L.I. 1649) of 1998 include clauses with the objective of decreasing illegal chainsaw operations. The regulations state all chainsaws must be registered with the relevant District Assembly and the District Forest Officer. Furthermore, each time a tree is felled the chainsaws registration number must be marked on the stump. Legislative Instrument 1649 prohibits the use of chainsaws in converting wood into lumber for commercial purposes.

Regulations provided in the Timber Resources Management Regulations to control illegal logging operations are likely to prove totally ineffective. The Ministry of Lands and Forestry estimates illegal chainsaw operations provide employment to roughly 50,000 Ghanaians [Agyeman (pers. comm., 26 August 2002])[6]. The sheer number of jobs created, and the large volume of wood supplied to industry by illegal operations suggests much more complicated steps will be required to deal with illegal operations than simply asking Ghanaians to register their chainsaws.

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[5] This recommendation was derived from a recommendation made by Mr. Lawrence Antwi (Principal of The College of Renewable Natural Resources in Sunyani, Ghana) who suggested loggers in Ghana could get better prices from millers if they approached the millers and asked what they would be willing to pay for a certain log prior to felling the tree. This way the logger has a form of bargaining power, as if he or she feels the price is too low the tree can be left standing until the miller is willing to pay a higher price for the resource.

[6] Mr. Fredua Agyeman is the Technical Director of Forestry for the Policy Planning Monitoring and Evaluation Division of the Ministry of Lands and Forestry in Accra.

Illegal logging activities are not a new phenomenon in Ghana; they have been a major problem for a long period of time. The volume of wood harvested through illegal chainsaw operations (roughly 1.7 times more than the AAC) proves initiatives taken to curtail chainsaw operations have proven totally ineffective. Since the inception of L.I. 1649, the Ministry of Lands and Forestry has realized it will be unable to control chainsaw operations through regulations provided under L.I. 1649 and has therefore decided to pursue alternative livelihood programs to reduce illegal operations. The Ministry is proposing to employ illegal operators in:

- thinning forest plantations;
- forest boundary demarcation and clearing;
- forest plantation coppice management;
- land clearing and other related activities on the on-going National Forest Plantation Development Programme;
- assisting timber companies' timber harvesting operations in challenging areas; and
- the recovery of timber off-cuts (*i.e.*, wood left behind by the forest company which can be used in another sector of the wood industry such as carvings) in the forest [Agyeman (pers. comm., 26 August 2002]).

The Ministry of Lands and Forestry should be commended for the idea of employing illegal chainsaw operators in alternative livelihoods as the strategy focuses on trying to solve one of the underlying causes of illegal chainsaw operations. The strategy's success in the field is difficult to predict, one will have to wait and see how

many chainsaw operators come forward for employment. The ability of the FC to convince illegal operators they are being called forward for re-assignment and not for punishment will have a major bearing on the strategy's success.

The provision of alternative livelihoods is a fundamental step towards decreasing illegal chainsaw operations; employment is not the only underlying agent of illegal operations however. Solving the illegal chainsaw operations problems will therefore require a multi-pronged attack. Another underlying agent involves the large demand for the wood supplied by illegal operations. Much of the demand for chainsaw lumber arises from furniture manufacturers (Birikorang *et al.* 2001). A strategy must therefore be developed to find an alternate supply of wood for the furniture manufacturing industry.

A third prong to the attack on illegal chainsaw operations involves getting local people involved in forest management. Once communities are active participants, much stronger mechanisms will be in place protecting Ghana's forest resources. The Ministry of Lands and Forestry should undertake a feasibility study to examine the potential of licensing and regulating chainsaw operations – as an interim measure – until local people become effective players in forest management activities.

Recommendations

The following actions should be taken to strengthen the implementation of strategies contained in the Timber Resources Management Act:

1) The Ministry of Lands and Forestry must make solving the competitive bidding aspect of the TUC process a top priority. Competitive bidding could be further improved by having forest companies bid on standing timber, thus providing the Ministry a form of bargaining power if bid prices are too low.
2) Illegal chainsaw operations must be solved. The long term solution to the issue will require bringing forest fringe communities into the forest management process. Incorporating local people into forest management takes considerable time. The following strategies should be applied as interim measures:
    a) Find an alternative source of wood to supply the furniture manufacturing industry – currently the main destination for chainsaw lumber. Commercial plantations are a viable option; they could begin providing considerable volumes of wood within a relatively short period of time given Ghana's favorable climatic conditions.
    b) Undertake a feasibility study to examine the potential of licensing and regulating illegal chainsaw operators.

## CONTROL AND PREVENTION OF BUSHFIRES LAW OF 1990

Bushfires have a tremendous effect on Ghana's renewable resources. As noted earlier bushfires need to be controlled to minimize their negative effects on forestry, agriculture, rangeland, soil conservation, and wildlife (Nsiah-Gyabaah 1996). The need to control bushfires is well understood in Ghana; however strategies developed to date to suppress bushfires have proven ineffective. The issue of bushfires is extremely complex, with several factors hindering the development of effective suppression strategies.

### Challenges to Developing Effective Bushfire Suppression Strategies

One of the major factors complicating the suppression of bushfires is the degree to which Ghanaians rely on fire. Fire has been depended on for generations as a tool used in achieving a wide array of everyday objectives (Korem 1985). Unfortunately fire can be a beneficial tool one minute, and a detrimental force (*i.e.*, a bushfire) the next.

Ghana's climate facilitates the rapid spread of bushfires. Relatively moist conditions are quickly replaced as the dry, hot harmattan winds roll in during the dry season transforming the landscape into a tinderbox; easily ignited by a single spark. The rains bring the end of the dry season and the beginning of the rainy season. As the rainy seasons begins, fires cease and so too it seems do people's enthusiasm and interest in

working towards creating bushfire suppression strategies (Korem 1985; Nsiah-Gyabaah 1996).

Bushfires are easily set and continue to burn unattended. The anonymity of setting fires and their self propagating nature, renders determining the origin of a fire very difficult. These attributes provide people with the opportunity to continue to use fires with a low probability of getting caught. Policing efforts are further complicated in some areas of Africa as people use simple time-delay devices, such as placing a few matches and some dry grass over one end of dried cow dung and then igniting the opposite end. Their likelihood of being caught is decreased by ensuring they are long gone before the smoldering fire reaches the matches (Kull 2002).

Fire has been an issue in Ghana for a long time, however prolonged drought and strong harmattan winds leading up to the 1982-1983 dry season created favorable conditions for particularly severe bushfires. The 1982-1983, dry season saw bushfires ravage half of Ghana's vegetative forest cover and destroyed 35 percent of Ghana's standing food crops and stored cereals (Gboloo 1998). The severe fires of 1983 combined with human activities, allowed fires to begin burning into forested areas previously safe from the ravages of fire.

Overview

The Government's bushfire policy is illustrated by The Control and Prevention of Bushfires Law (P.N.D.C.L 229) of 1990 and the Control of Bush Fires Law (P.N.D.C.L. 46) of 1983. No policy documents exist on bushfires other than the two P.N.D.C. Laws. The laws exemplify the governments overall policy as being one of criminalizing and penalizing people responsible for bushfires.

The Control of Bush Fires Law of 1983 (repealed by The Control and Prevention of Bushfires Law (P.N.D.C.L 229) of 1990) is a short law, a mere two pages long. The narrow scope of the Law and the date of its coming into effect (May 10, 1983) make it likely the Law was created in quick response to the serious bushfires of the 1982-1983 season. The Control of Bush Fires Law of 1983 made bushfire culprits liable to fines of up to 10,000 cedis and jail terms of up to five years, and accountable for the cost of any damages as a result of their bushfire.

The Control and Prevention of Bushfires Law (P.N.D.C.L. 229) of 1990 has a much broader scope than its predecessor of 1983. Bushfires are defined as the uncontrolled burning of any farm, forest or grass land. The onus is placed on individuals, making them responsible to keep any fires they start from spreading. The Law permits fires to be set – by FC staff – within forest or wildlife conservation areas for management purposes, or to protect the area from accidental fire (*i.e.*, early burning). The Law also makes a provision allowing the Director of Agricultural Extension

Services, or the Director of Animal Health Production Department, to authorize people to set fire to specific areas, other than conservation areas, for the purpose of range management or other agricultural purposes - provided the fire is controlled and confined to the specified area.

Under the Control and Prevention of Bushfires Law anyone who starts a bushfire commits an offense and is subject to a fine of between 20,000 and 100,000 cedis (at current exchange rates approximately $3.00 to $16.00 Canadian), up to 12 months of imprisonment or community labour, or both the fine and jail time. The culprit can also be held accountable to cover the cost of damages done to property, crops, or trees. In addition to penalizing those responsible for bushfires, P.N.D.C.L. 229 also makes any person who knows of a culprit responsible for a bushfire and fails to report him or her, or knows of the occurrence of a bushfire yet fails to report it, liable to fines of up to 10,000 cedis or to imprisonment for up to one month.

The Control and Prevention of Bushfires Law also called for the establishment of a Bushfire Control Sub-Committee in each District Assembly within three months of the Law's coming into force. Gazette notification occurred on April 20, 1990. Bushfire Control Sub-Committees are to be composed of members of the District Assembly as deemed appropriate by the Assembly. The Sub-Committees were charged with carrying out six major functions:

- create by-laws, for the consideration of the District Assembly, deemed appropriate to prevent, control and monitor bushfires;

- specify times of year when burning is prohibited;
- create, where appropriate, an early-burning program for the district and ensure its proper implementation and supervision;
- create town, area, and unit Bushfire Control committees to direct activities of the town, area, or unit Fire Volunteer squads;
- educate residents on hazards associated with uncontrolled fires; and
- gather data on all bushfire outbreaks and offences within the District (Control and Prevention of Bushfires Law (P.N.D.C.L. 229) 1990).

In addition to their six major functions, the Bushfire Control Sub-Committees were also charged with the task of creating Fire Volunteer Squads in "every town, area or unit." The Ghana National Fire Service is responsible for training the squads. Squads were to be composed of local villagers. The role of the Fire Volunteer Squads, while not clearly defined in the Law is basically to band together and act as the first (and in reality the only) line of attack against bushfires in their particular areas.

Analysis

The Government's direction on bushfire control policy has proven woefully ineffective as bushfires continuing to ravage the Ghanaian landscape each dry season. Communities in Northern Ghana are experiencing increased occurrences of bushfires (Al-Hassan and Saaka 1998). While the Control and Prevention of Bushfires Law is

proving futile it did raise two useful concepts: the provision of establishing Fire Volunteer Squads and the creation of Bushfire Control Sub-Committees.

Strengths

The notion of establishing local fire volunteer squads has significant potential in terms of decreasing the frequency of bushfires in Ghana. Two major benefits exist to having local fire volunteer squads as oppose to non-local squads. First the institutional capacity simply does not exist in Ghana for a Government agency to fight bushfires. The Ghana National Fire Service (GNFS) does not have the necessary equipment, nor are its staff members properly trained in combatting bushfires. Furthermore, the cost associated with equipping and training the GNFS to make it effective at repulsing bushfires is unfeasible given Ghana's current economic conditions. Local fire volunteer squads are therefore helping fill a void in Ghana's institutional capacity. Second and more important is that the establishment of local fire volunteer squads is likely to foster the idea amongst rural people that they can take the initiative to keep bushfires out of their areas using local means.

The Control and Prevention of Bushfires Law of 1990 also provided for the provision of creating Bushfire Control Sub-Committees in each district assembly. The principle underlying Bushfire Control Sub-Committees is namely providing for the development of site-specific, or perhaps more appropriately district-specific, approaches to combatting bushfires through the creation of local by-laws is eminently sound. By-laws created at the local level will be more effective – than previous anti-bushfire laws –

as they allow the incorporation of local, site-specific factors and conditions into bushfire control strategies, thus permitting the creation of more effective strategies than broad generic approaches applied from outside the district. The benefit of locally created by-laws – as compared to laws imposed at the national level – is discussed in paragraphs to follow.

Weaknesses

Unfortunately the Control and Prevention of Bushfires Law (P.N.D.C.L. 229) of 1990 has more weaknesses than it does strengths. The Law is proving ineffective in decreasing the occurrence of bushfires because it is unrealistic. The institutional capacity simply does not exist for any agency in Ghana to oversee the Law's implementation in the field. Furthermore, the responsibility of enforcing the law is not assigned to any particular agency; as a result no agency has taken the lead in trying to ensure the law is carried out in the field. Another reason the Law is proving ineffective in curtailing the number of bushfires, is that even the strong aspects of the Law (*i.e.*, the establishment of Bushfire Control Sub-Committees and Fire Volunteer Squads) are not being properly implemented in the field.

Bushfire Control Sub-Committees

Bushfire Control Sub-Committees is a good concept; the degree to which they have been formed in the various districts is discouraging however. Locating information on the number of District Assemblies that have been successful in forming Bushfire

Control Sub-Committees (a legal requirement under The Control and Prevention of Bushfires Law) is difficult. While no complete information on the establishment of Bushfire Control Sub-Committees was uncovered during the research period in Ghana, the author's experiences suggests a poor establishment rate 13 years since the Law's inception. Personal communication with a number of professionals suggested Bushfire Control Sub-Committees had not been created in most of the districts. A visit made by the author to the district assembly office in Wa reinforced the notion; no one at the office could confirm the establishment of a Bushfire Control Sub-Committee for their district.

A study carried out in Ghana's Upper East Region by an undergraduate thesis for the Institute of Renewable Natural Resources came up with similar findings. The study concluded Bushfire Control Sub-Committees had not been established in any of the three districts examined in the study. Furthermore, data on bushfires were poor (a Sub-Committee task) and no one had been prosecuted under the Law even though the region had experienced many bushfires in the four years since the Law's inception (Anongura 1994).

The lack of established Bushfire Control Sub-Committees is a major failure due to their critical role in carrying out many aspects of the Law. If the central government is incapable of getting district governments to adhere to national laws, how can it expect people at the ground level to respect and abide by the laws? Relations between the different levels of government need to be strengthened to improve intra-governmental effectiveness.

Fire Volunteer Squads

The Control and Prevention of Bushfires Law assigns the responsibility of training Fire Volunteer Squads to the Ghana National Fire Service (GNFS). Interviews carried out with high ranking officers of the GNFS in the Upper West Region suggested much work had been done in creating and training squads in the various communities; over time many of the squads collapsed due to a lack of motivation however. The lack of motivation was attributed to a lack of equipment for the squads to carry out their functions of fighting bushfires. The GNFS officers suggested the squads, consisting mostly of area farmers, would be forced to fight fires in sandals and with only palm fronds to beat the flames. The officers concluded a lack of equipment rendered the squads relatively ineffective at combatting bushfires [Iddi and Dabinla (per. comm., 31 July 2002)][7].

While a lack of basic equipment complicates fighting bushfires, several communities have been successful in keeping bushfires out of their areas without much in the way of modern suppression equipment. The key in these communities appears to be the realization by local people that fires are degrading their environment and therefore their livelihood. Once people realize it is in their best interest to keep fires out of their areas they can do so quite effectively and with little or no outside help.

[7] Mr S.B. Iddi is the District Fire Officer and Mr. J. Dabinla is the Bushfire Coordinator for the Ghana National Fire Service in the Upper West Region.

Decreasing the Occurrence of Bushfires

Ghana has had external assistance in developing bushfire suppression strategies; however it has proven ineffective (Pyne 1999). Given Ghana's current economic conditions and lack of institutional capacity, a grassroots approach is the only feasible way of effectively combatting bushfires in Ghana. Several communities in Northern Ghana have been successful in keeping bushfires out of their areas. The expulsion of bushfires from such areas is not attributable to Government anti-bushfire laws but rather to community-based initiatives. To be successful in decreasing the occurrence of bushfires, the Ghanaian Government needs to take a page from what is proving effective in the field. Government policy should be altered from focusing on trying to deter bushfires by penalizing those responsible for bushfires – something the Government has proven itself incapable of doing – to encouraging locally initiated grassroots strategies to control bushfires.

Characteristics of No-Burn Communities

A study carried out by the Technical Assistance Programme for Awareness and Communication for Environmental Protection examined and compared characteristics of communities which had been successful in mitigating bushfires (referred to as no-burn communities) to those that had not been successful (burn communities). The study, called 'Challenges of Bushfire Control and Prevention in Northern Ghana', was

undertaken in 24 districts of Ghana's three northern regions (Al-Hassan and Saaka 1998).

Study results indicated that while a high level of understanding of the causes and effects of bushfires existed in most communities, only some communities were successful at controlling bushfires in their areas. The investigation revealed (Al-Hassan and Saaka 1998) the following common characteristics amongst no-burn communities: strong traditional leadership, limited land availability for farming due to population pressures, and some type of value on the land (*i.e.*, sacred groves, community woodlots, or individual tree growing).

Strong Traditional Authorities

Strong traditional authorities are important in no-burn communities as they have the social power to take the lead in encouraging their community to work towards suppressing bushfires in their areas. Many of the no-burn communities created local anti-bushfire by-laws as a means of discouraging people from using fire in a negligent fashion. Traditional authorities also played a key role in ensuring local by-laws were adhered to (Al-Hassan and Saaka 1998).

Most of the local by-laws involve the offender paying a monetary fine and a certain amount of livestock (generally sheep or goats) or guinea fowl for their offense

[Ester Polkuu Chirii (pers. Comm., 4 July 2002)][8]. Local by-laws are likely be more effective than fines imposed under The Control and Prevention of Bushfires Law of 1990, as they are solutions created – and agreed to – by the community as a fair punishment for community members whose actions result in bushfires.

Limited Land Availability

The study also found areas with limited land availability, due to population pressures, tended to be more effective at keeping bushfires out of their areas. These areas were better able to inhibit bushfires due to a high level of interest in protecting personal property (Al-Hassan and Saaka 1998). Basically, since most of the land in such areas was in use, personal protection existed to safeguard areas from bushfires.

Values on the Land

Another common characteristic amongst no-burn communities was some form of easily recognizable value on the land. Such values include sacred groves, community woodlots, or individual trees. By having something of recognized value – basically an investment on the land – local people want to protect it from being damaged by bushfires (Al-Hassan and Saaka 1998).

[8] Ester Polkuu-Chirii is a Forestry Officer with the FSD of the FC in Wa.

## Recommendations to Decrease Bushfires

Creating strong traditional authorities and limiting land availability are not easy to initiate in short periods of time. Three initiatives that would be beneficial in reducing the occurrence of bushfires however include: creating/maintaining values on the land, encouraging grass-roots level anti-bushfire initiatives, and increasing coordination amongst government agency extension units.

### Creating/Maintaining Values on the Land

Al-Hassan and Saaka's study (1998) determined some type of value on the land would be effective in encouraging local people to work towards keeping bushfires out of their areas. The finding was reinforced by the author through interviews with farmers in Ghana's Upper West Region during the research period. When farmers were asked what they thought would be the most effective way of decreasing bushfires in their areas the most common answer was to plant trees in agricultural fields. Farmers suggested the trees would serve as a form of investment on the land which in turn people would protect from bushfires.

The first step in working towards decreasing the occurrence of bushfires should be to ensure communities have some type of investment on the land. Initiatives that could be undertaken by government agencies in Ghana to encourage the creation/maintenance of values on the land include: tree planting by individual farmers

and the creation of 'Community Protection Areas'. The FSD is likely in the best position to oversee these initiatives implemented in the field.

Individual tree planting

Small-scale tree-nurseries, such as those established by the CIDA-funded Ghana-Canada *IN CONCERT* program, could be created to supply trees to farmers. The nurseries are run by individuals or by the community, as small-scale businesses. In this fashion the nurseries would be beneficial not only in providing seedlings to farmers, but in fostering the idea of how people can create simple, small-scale businesses in their communities. Encouraging farmers to plant trees on their agricultural fields is not only beneficial as it serves as a form of investment farmers will want to protect from bushfires, but if the species are properly selected the trees may help to maintain or even improve soil characteristics. While using species with ecologically beneficial characteristics is highly desirable, species selection should be based on the interest of farmers.

Establishment of community protection areas

Establishing Community Protection Areas (CPA's) is another way of creating and/or maintaining an investment on the land. The author was first exposed to the idea of Community Protection Areas through the Ghana-Canada *IN CONCERT* Program. The CPA concept involves communities setting aside a parcel of land and protecting it from fire. The notion behind CPA's is that as the area recovers with the exclusion of fire people will see the practicality of keeping fires out of their area. In other words,

CPA's are demonstration areas illustrating the benefits associated with excluding bushfires.

The CPA's concept is great idea and appears to be working well in many areas. Communities that have been successful in keeping bushfires out of their CPA's are beginning to see plants and animals coming back that they used to have to walk long distances to find; such as medicinal plants, and animals [Baah (pers. comm., 2 August 2002)][9].

CPA sites must be selected very carefully. Where possible CPA's should be located around ecologically important features, such as the community's water source, thereby allowing the community to see how protecting areas from fire not only helps vegetation and wildlife return, but can also improve other environmental factors. Whenever possible, CPA's could be established near schools allowing an invaluable teaching example for children.

Encouraging grass-roots level anti-bushfire initiatives

Once communities have a value – or are in the process of developing a value – on the land, the next step involves encouraging them to develop an anti-bushfire initiative. The main task should be to encouraging communities to develop their own initiative to protect their CPA. The FSD should encourage communities to have two aspects to their anti-bushfire initiative. First, a strategy to protect the CPA and second, a

[9] Mr. William Baah is the Regional Manager (Upper West Region) for the Forest Services Division of the Forestry Commission.

local by-law outlining what the community feels is an appropriate deterrent to deal with people whose negligent use of fire results in a bushfire. The FSD should play a key role in providing suggestion as to how communities can best protect their CPA's such as the creation of fire breaks and the planting of fire resistant evergreen tree species around the protected area.

Increasing coordination amongst government agency extension units

Government agencies often complain about limited resources for carrying out extension work. Another problem is that two or more agencies often extend to the communities different, and often contradictory, messages about the same issues. For example, the FSD could be carrying out extension work trying to convince farmers not to burn their fields in order to decrease the potential of bushfires, while at the same time the Ministry of Food and Agriculture may be advising farmers through their extension teams that burning is the easiest way to remove stubble from their fields and that the ashes are beneficial in increasing soil productivity.

Given the limited resources available to government agencies and the counterproductive effects of sending contradictory messages, governrnent agencies should work towards improving inter-agency coordination of their extension work. The first step involved in such a process would require agencies to meet and reach a consensus on a unified extension message that achieves the objectives of the various agencies. The second step would involve trying to pool extension resources (i.e., personnel, vehicles and equipment) between the different agencies to ensure the most efficient use of scarce resources.

## NATIONAL LAND POLICY (1999)

Formulation of the National Land Policy (NLP) began in 1993. The Ministry of Lands and Forestry had decided a national land policy was required due to a lack of coherent direction in Ghana's land administration system. The lack of direction complicated long-term planning and coordination, created interdepartmental jealousy and bickering, and culminated in a slow land delivery process. The overall result was a weak and ineffective land administration system which gave rise to:

- general indiscipline in the land market resulting in land encroachment, multiple land sales, use of unapproved development schemes, and haphazard development leading to environmental problems;
- indeterminate boundaries of customary-owned lands resulting from lack of reliable maps and plans;
- compulsory acquisition by the government of large tracts of land, for which little or no compensation has been paid;
- inadequate security of land tenure; and
- conflicting land uses, such as the activities of mining companies that leave large tracts of land degraded and useless for farming which forms the backbone of the Ghanaian economy (National Land Policy 1999).

The National Land Policy Committee was formed by the Ministry of Lands and Forestry in January 1994 to work towards developing a National Land Policy. The Committee comprised representatives from a wide variety of organizations. Table 14 provides an overview of the organizations represented on the National Land Policy Committee. After several organizational meetings, the committee divided into five subcommittees. Each subcommittee was charged with examining a certain aspect of the land issue in Ghana. The five aspects included: ownership and tenure, use and conservation, administrative and institutional arrangements, inventory and information, and legislation. Each subcommittee created a report outlining issues, problems, causes, and potential solutions for their particular aspect of the land issue (Kotey *et al.* 1998).

**Table 14. Summary of organizations represented on the National Land Policy Committee (developed from Kotey *et al.* 1998)**

| Organization |
|---|
| Lands Commission Secretariat |
| Department of Town and Country Planning |
| Survey Department |
| Forestry Commission |
| Forestry Department |
| Department of Wildlife |
| Environmental Protection Agency |
| National Development Planning Commission |
| Land Valuation Board |
| National House of Chiefs |
| Water and Sewerage Corporation |
| Ministry of Environment, Science and Technology |
| Ministry of Agriculture |
| Department of Geography and Resource Development (University of Ghana) |
| Faculty of Law (University of Ghana) |
| Land Administration Research Centre (University of Science and Technology) |
| Department of Land Economy (University of Science and Technology) |
| Water Resources Research Institute |
| Soil Research Institute |

After three months the subcommittees completed their tasks and the whole committee reconvened to assess the reports. Individual reports were modified and merged into a final report from which a draft policy document was prepared and subsequently approved by the entire committee. A consultant was then appointed by the Ministry of Lands and Forestry to complete a second draft of the policy (Kotey *et al.* 1998). The consultant completed the second draft and provided it to the National Land Policy Committee and several other stakeholders for review. Table 15 provides a summary of the organisations involved in reviewing the second draft of the Policy.

**Table 15. Summary of organizations involved in reviewing the second draft of the National Land Policy (developed from Kotey *et al.* 1998)**

| Organisations |
|---|
| Ghana Institute of Surveyors |
| Ghana Bar Association |
| Institute Planners |
| Institute of Renewable Natural Resources |
| all Regional Lands Commissions |
| all Regional House of Chiefs |
| Ghana Real Estate Developers Association |
| Ghana Cocoa, Coffee and Sheanut Association |
| Parliamentary Sub-Committees on: |
| Lands and Forestry; |
| Food and Agriculture; |
| Environment, Science and Technology; |
| Mines and Energy; and, |
| Local Government |

Many of the organizations provided feedback on the draft policy leading to the preparation of a third draft. A three day workshop was then held with the following participants: the organizations represented on the National Land Policy Committee, a representative from each of the regional land commissions, the President or a representative of each regional House of Chiefs, NGO's, representatives of migrant

farmers groups, representatives of the Ghana Real Estate Developers Association, the Managing Director of the Home Finance Company, as well as some individual experts. After the workshop the Ministry of Lands and Forestry and the Lands Commission completed a final draft of the National Land Policy (Kotey *et al.* 1998).

## Overview

While much of the National Land Policy focuses on improving Ghana's land administration system, the Policy also touches on protecting Ghana's soil and water resources. This section provides a brief overview of the Policy's strategies to improve the land administration system and environmental protection.

### Improving the Land Administration System

While improving Ghana's land administration system (LAS) may seem at first irrelevant to a thesis examining renewable resource policy, the ability of Ghana's LAS to control development and land use in environmentally sensitive areas can have a profound effect on the health and integrity of Ghana's renewable resources. One of the main objectives of the National Land Policy involves instilling order and discipline in the land market to reduce land encroachment, unapproved development, illegal sales, land speculation, and other forms of racketeering. Order is to be instilled into the land market through a strengthened LAS. A key action contained in the NLP, the objective

of which is to improve the LAS, involves the creation of a special division of the High Court by the Chief Justice (National Land Policy 1999). The sole purpose of the special division is to deal with land cases.

Environmental Protection Strategies

The National Land Policy's overall aim is to ensure "the judicious use of the nation's land and all its natural resources by all sections of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable resource management principles and in maintaining viable ecosystems" (National Land Policy 1999). A guiding principle of the Policy is when land is used for mining or logging activities, the land must be restored to its original state.

Guidelines provided in the National Land Policy to ensure sustainable land use include:

- the prohibition of logging activities in areas with slopes greater than 30 percent;
- restricting agriculture, mining, and human settlement in areas with gradients of 30 percent unless "appropriate technology is employed in each circumstance to mitigate any adverse environmental and ecological consequences"; and
- considering areas within 100 metres of the high water mark of water bodies as protected areas.

While not explicitly stated in the Policy, designating riparian zones as protected areas (with respect to agriculture, mining, and human settlement) suggests human settlement, agriculture and mining activities are not allowed within such areas. Furthermore buildings, structures, or sub-structures developed on lands not owned by the developer, or on lands for which the developer does not have a building permit can be demolished with the developer being held accountable for demolition costs.

Inland and coastal wetlands are also protected as environmental conservation areas under the National Land Policy. The following activities are prohibited in conservation areas:

- physical draining of wetland waters;
- damming of streams and water courses feeding wetlands;
- human settlement and their related infrastructure development in wetlands;
- disposal of solid waste and effluents in wetlands; and
- mining in wetlands.

Analysis

In fairness, it is too early to undertake a complete analysis of the National Land Policy due to the Policy's relatively recent release – 1999. The success of the policy in achieving its overall aim of ensuring the judicious use of the nation's land and all its

natural resources by all sectors of the Ghanaian society will depend heavily on the Land Administration Project; a project initiated by the Government of Ghana and the World Bank to implement the National Land Policy. The Project was to be launched in March of 2003 [Asiama (pers. comm., 23 August 2002)][10].

While too early for a complete analysis of the National Land Policy, some valid observations can be made at this point in time. The collaboration involved in the formulation of the National Land Policy was more exhaustive, and involved more consultation with ground level people, than that carried out for the Forest and Wildlife Policy of 1994. One may therefore conclude, since both policies were created by the Ministry of Lands and Forestry (MLF) that the MLF is taking collaboration more seriously; a good sign. The consultation process however was still very top heavy, with much more consultation occurring with professional organizations than people at the local level. While improvements have been made, the Ministry of Lands and Forestry still has work to do on improving collaboration with local people.

Improving the Land Administration System

The land administration system in Ghana is weak and ineffective (National Land Policy 1999). An important NLP strategy to improve the LAS involves the creation of a court system to deal solely with land cases. The notion behind creating the land court was that it would be able to clear the tremendous number of backlogged cases which are

[10] Prof Seth Asiama is the Director of The Institute of Land Management and Development (ILMAD) and the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi.

currently bogging down Ghana's land administration system. From 1998 to June 2002 the total number of land cases before the courts was 2,341. During the four year time frame a mere 73 of the cases were disposed (Anonymous 2002). To this day no such court has been established, this is unfortunate for two reasons. First, the establishment of a land court basically formed the cornerstone of the NLP's strategy to improve the land administration system. Second, the creation of a land court is a relatively simple task that would generate immense benefits in terms of strengthening the LAS. Until a land court is created Ghana's land administration system will continue to move too slowly resulting in people not abiding by, or having respect for, the system.

Soil Conservation and the Protection of Water Bodies

The National Land Policy prohibits certain human activities in environmentally sensitive areas to conserve the soil and protect water bodies. The forbidden activities include logging on lands with slopes in excess of 30 percent, and agriculture, human settlements and mining which are only allowed on gradients over 30 percent if appropriate technologies are not employed to mitigate negative environmental effects.

Restricting these types of human activities in sensitive areas is commendable as it will help protect fragile soils from erosion in high risk areas. The degree to which the guideline is followed in the field appears to vary between sectors. A trip from Accra to Cape Coast along the main highway reveals many examples of agricultural activities being carried out on lands with slopes in excess of 30 percent. In these areas maize is planted straight up the sides of slopes, with no appropriate technologies in place – such

as planting crops along the contours of slopes or building terraces – to mitigate soil erosion. Ghana's logging manual (released one year before the NLP) abides by the guideline; forbidding logging on inclines of 30 percent or more and stating that permission to cut trees on slopes greater than 20 percent must be sought, and granted by the District Forest Officer, prior to felling (Ghana Forest Service 1998).

Guidelines contained in the National Land Policy and the logging manual are consistent in terms of soil conservation; however disparities exist in the protection of riparian areas. The logging manual recognizes siltation of waterways as being extremely detrimental to water bodies and suggests buffer zones be established along streams and rivers. The logging manual suggests buffers of 25 and 50 metres for streams and rivers respectively (Ghana Forest Service 1998), while the NLP calls for the establishment of protected areas within 100 metres of waterways. The contradictory guidelines suggest logging activities are being carried out in contravention of the NLP.

The National Land Policy does not provide any detail as to what a protected area entails. The Policy merely states "with respect to water bodies a minimum of 100 metres off the high water mark should be declared as protected areas (National Land Policy 1999)." After interviews with Land Commission officials, the author was left with the sense that protected areas mean human activities and buildings are not permitted within 100 metres of water bodies. Using this definition of a protected area much work will have to be done to make conditions on the ground conform to guidelines spelled out in the National Land Policy. A rather dramatic example is provided with a view of an area in Kumasi where buildings have been constructed far too close to a

water body (Figure 8). Since these buildings are in contravention of the National Land Policy they could be demolished at the owners' expense.

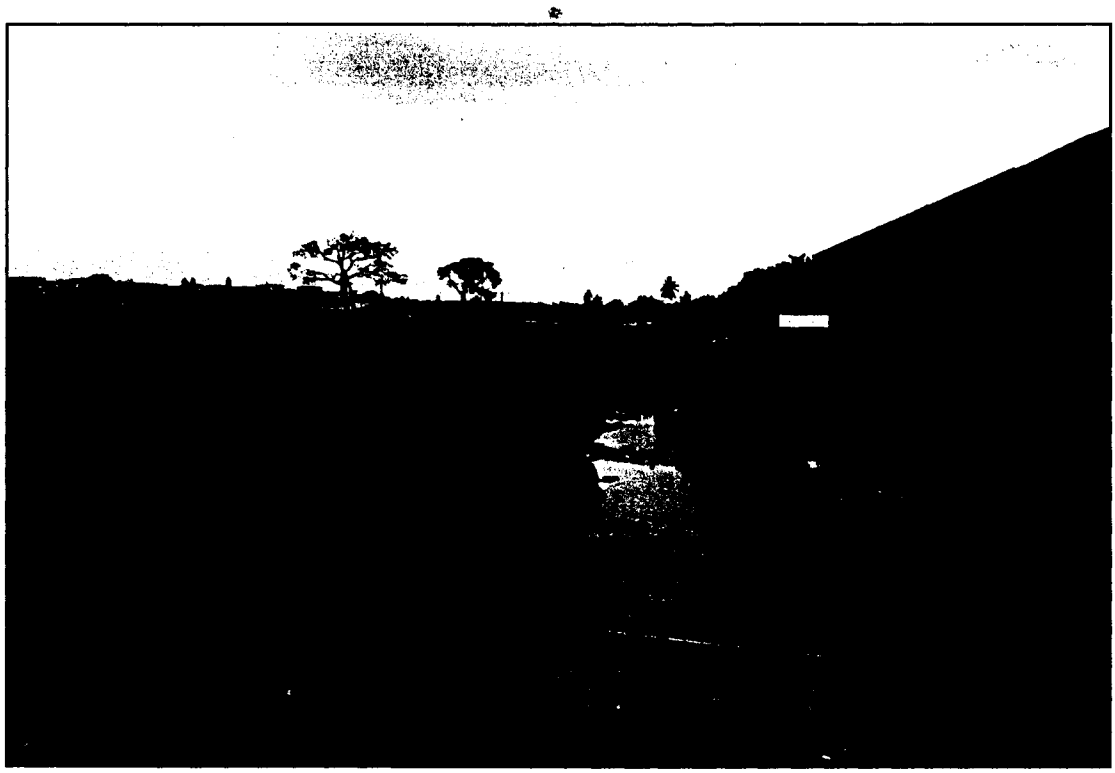

**Figure 8. A stream passing through the Anloga woodworking area in Kumasi.**

Failure to Involve the Traditional Authorities

The most critical weakness of the National Land Policy involves the Policy's failure to recognize the important role of traditional authorities in Ghana's land system. The NLP forbids agriculture and human development in sensitive areas, yet the Policy omitted the traditional authorities who play a critical role in assigning land to people for agricultural and human settlement activities. The failure to include traditional

authorities in the National Land Policy will severely undermine the Policy's effectiveness in the field.

Recommendations

The National Land Policy contains several good ideas which will be of benefit in helping achieve the Policy's overall goal; however several improvements can be made. A clear definition must be developed for what is meant by 'protected areas' and a clear description provided as to what is, and what is not permitted in such areas. Vague wording in a national policy document will only lead to confusion and is likely to result in people interpreting issues to suit their personal interests and therefore disregarding key strategies.

Ghana's ineffective land administration system needs to be addressed through the creation of a court whose sole function would be to deal with land issues. The land court is critical to instilling discipline into the LAS to reduce the unreasonably long time delays involved in working through the proper channels. Removing the delay is essential. A system that is unable to respond to people in a timely fashion will result in people working outside the system.

The National Land Policy should be amended to increase the role of traditional authorities. This amendment is critical due to the lead role traditional authorities play in allocating land in Ghana. A policy that tries to change the way lands are used in Ghana

has little chance of success without the support of traditional authorities. Having the traditional authorities effectively involved will be essential if the implementation of the guidelines is to be successful. Traditional authorities – for example – could play a helpful role in ensuring steep sloping lands are not granted to individuals for farming purposes and that buildings are not constructed on lands in close proximity to water bodies.

Carrying out human activities in environmentally sensitive areas can definitely have profound negative effects. It is important to bear in mind however that people carrying out activities in such areas are more than likely pressured into doing so. In the case of agriculture for example, very few farmers are likely to want to spend their day farming on slopes in excess of 30 percent. The reason activities are carried out in such areas is most likely due to land shortages attributable to the underlying cause of population pressures.

## NATIONAL POPULATION POLICY

As research progressed and underlying causes were examined, it became apparent population was one of the main underlying causes of environmental degradation. The nation has a wealth of renewable natural resources which support Ghanaians. However the resources are finite. As Ghana's population grows, the ability of those resources to support the population diminishes. Furthermore, as the country's population continues to increase the integrity of the resource will begin to deteriorate – severely limiting the ability of the population to survive off the diminishing resource base. The sustainability of Ghana's renewable resource is therefore ultimately dependent on the country's ability to stabilize population growth.

In 1990 the amount of per capita land available for agriculture was 1.95 hectares per person. Based on current projections this figure is estimated to fall to 0.43 hectares by the year 2020. In addition to decreasing the per capita availability of agricultural land, rapid population growth forces farmers to cultivate marginal lands such as those on steep slopes and on fragile soils (National Population Policy 1994). Undertaking agricultural activities on marginal lands leads to significant environmental degradation. Farmers also begin clearing forests to create new agricultural lands. Locating empirical data pertaining to the extent of deforestation in Ghana attributable to agriculture is difficult; however agriculture is recognized as having a significant effect on Ghana's forests (Agyarko 2003).

Rapid population growth has serious effects in urban areas as well. High population growth rates result in heavy demands for shelter – leading to urban sprawl. Most urban authorities cannot keep up with urban development, resulting in authorities being unable to provide basic services such as water, sanitation, sewerage, and drainage (National Population Policy 1994). Improper sanitation and sewer facilities are likely to have negative environmental effects. The inability of local authorities to keep up with demand and control urban development often results in the construction of new buildings in environmentally sensitive riparian areas. The National Population Policy outlines the strategic direction the Nation will take in dealing with key population issues.

Summary of the National Population Policy

The National Population Policy replaced the 'Population Planning for National Progress and Prosperity: Ghana Population Policy' of 1969. The Population Policy was released in 1994 by the Minister of Finance to deal with emerging issues in Ghana's population. One of the main issues involved the population growth rate which remained unacceptably high 25 years after the inception of the first population Policy (National Population Policy 1994).

The first 24 pages, of the 56 page National Population Policy document, describe the characteristics of Ghana's population and its effects on the environment and Ghana's social development. The last 32 pages of the policy document present the National Population Policy itself. The policy provides broad goals and objectives, precise

population targets and the strategies that will be implemented to achieve the Policy's goals and objectives.

The Policy's major goals include: improving the standard of living and quality of life for the Ghanaian people, fostering the idea amongst the public of the effects of having a large population growth rate and the means by which couples can control family size, and enhancing the status of women in society. Women's status in society is to be elevated by eliminating discriminatory laws and cultural practices, promoting employment of women, and increasing the proportion of women entering and completing senior secondary school.

Policy objectives provided in the National Population Policy include: ensuring the integration of population issues into development planning activities and all levels of the administrative structure, improving the demographic database, promoting awareness of population issues amongst opinion leaders and the public, providing the population with the necessary information on the value of having smaller sized family, educating the population on the need to conserve the environment, and empowering women to increase their participation in the public sector and economic generating activities.

The National Population Policy provides targets as benchmarks to be achieved through the Policy's implementation. The first target involves reducing the total fertility rate (i.e., the number of children a woman is likely to have throughout her life) from 5.5 to 5.0 by the year 2000, 4.0 by 2010, and 3.0 by 2020. A second target involves reducing the population growth rate from 3 percent to 1.5 percent by 2020. A third

target involves reducing the proportion of women who marry before 18 years of age by 50 percent by the year 2000 and 80 percent by 2020. In terms of education, the Policy's target is to increase the number of 15 to 19 year old females who gain a secondary, or higher, education by 50 percent by the year 2005 and 80 percent by the year 2020.

The National Population Policy provides several strategies to achieve the Policy's overall goals and objectives. Several different types of strategies are proposed under the Policy. Education is recognized as playing an important role in reducing population growth rates. The Policy suggests using religious leaders to remove negative traditional gender norms and customs to elevate the status of women in society. Economic tools are also put forth to be used in decreasing population growth rates. An example of one such economic tool includes only paying maternity leave for the first three children, after which the parents will be on their own.

Analysis

The National Population Policy is an extremely comprehensive policy document. Precise and measurable population targets are provided that the policy will work towards achieving. The importance of curtailing population growth to minimize environmental degradation is clearly stated in the Policy document.

One of the Policy's main strengths involves the realization of the important role of girl child education as a catalyst for change in decreasing the population growth rate.

The type of education involved is not family planning, rather improving the basic education received by girls. The United Nation's Population Fund recognizes improving the amount of education women receive as being a necessity in reducing population growth rates (UNFPA 2002).

The effect of girl education in decreasing the population growth rate is evident in Ghana's Demographic and Health Survey of 1998. Data in the survey illustrated as women gained more education they waited until later in life before having their first child (a factor which will likely lead to the woman having fewer children over her lifetime) and that the number of children desired by women decreases dramatically as education levels increased (Ghana Statistical Service 1999).

Nationally, Ghana's educational system is not very strong. Enrollment is low with an estimated 30 percent of children in the primary school age group not attending school due to a lack of schools and teachers. Furthermore, the primary school completion rate is only 60 percent. The share of the national budget allocated to education has increased since the 1970's however the high population growth rates over the same period resulted in an actual decrease in per capita education expenditures (National Population Policy 1994). Ghana's success in achieving population goals outlined in the National Population Policy is heavily dependent on how successful the government is in increasing the level of basic education received by Ghanaian women.

A very interesting strategy was put forth in the Policy namely using religious leaders to help remove negative traditional gender norms and customs, to raise the status

of women in society. Given the incredible popularity of, (only 6.8 percent of all Ghanaians report not to be affiliated with any religion (Ghana Statistical Service 2002)) and the amount of faith Ghanaians have in religion, the strategy is commendable. Religious leaders reach a very large audience and their message will likely be well accepted. The key to the strategy is getting the support of the religious leaders. If such is the case it should in turn lead to gaining wide-spread public support.

A major weakness of the National Population Policy involves the fact the Policy did not place enough emphasis on the important role men play in decreasing population growth rates in the country. Many of the strategies to reduce population growth rates focus only on the role of women. Women do play an important role, however throughout much of Ghana men have a stronger say on issues such as how many children a family is going to have. The Policy contains several strategies to improve the status of women, if the Policy is to be successful in achieving its targets equal emphasis will need to be placed on convincing men of the importance of smaller sized families. The lack of emphasis placed on changing attitudes amongst men is the Policy's greatest weakness and will likely undermine the Policy's overall success.

While Ghana's population has continued to grow since the release of the National Population Policy, an examination of Ghana's population trends suggests progress is being made towards curtailing population growth rates. At the time of the National Population Policy's release in 1994 Ghana's population growth rate was estimated at 2.9 to 3.1 percent per year (National Population Policy 1994). The most recent population census revealed a slightly reduced population growth rate of 2.7

percent per year. Two other population trends that are encouraging include a subsiding fertility rate and increasing literacy rates. In 1994 the fertility rate was 5.5 children per woman – by 2000 the rate had decreased to 4.5 percent. The literacy rate has also improved (Ghana Statistical Service 2002) since the policy's inception – a sign that progress is being made towards achieving the policy's goal of improving the education of Ghanaians.

# DISCUSSION

Ghana's renewable resource policy has undergone a substantial evolution since the early 1900s. In the early days, policy direction focused on laws and decrees as ways of getting local people to conform to renewable resource policy. Much less attention was given to sustainable resource management. Today, sustainability is an underlying theme in the nation's renewable resource policy. Increasing the involvement of local people through collaborative management is also at the forefront as an essential strategy in maintaining renewable resources.

At a time when considerable progress is being made in improving the management of Ghana's renewable resources, the Government of Ghana is undertaking a baffling move: it is in the process of trying to double the nation's annual allowable cut (AAC). Many experts agree Ghana's current AAC of 1.01 million cubic metres per year is already too generous and should be reduced to ensure sustainability. The proposed increase would be achieved through a tripling of the off-reserve AAC while maintaining the current AAC for on-reserve areas [Lowe (pers. comm., 3 September 2002)][11].

Finding logic in the government's initiative is extremely difficult. The timing of the initiative raises questions, as a major forest inventory was underway and nearing

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completion at the time of the decision. A logical move would have been for the Government to have waited to see the results of the forest inventory prior to increasing the AAC by such a drastic level. Since the decision was made prior to the results of the forest inventory, the decision appears not to be based on any type of sound forest management principles.

The only logical solution the author can derive from the government's initiative is that the doubling of the annual AAC is being carried out as direct result of The Forest Commission Act – the five hundredth and seventy-first act of the parliament of the Republic of Ghana – which transformed the Forestry Commission from a public institution to a body corporate. As a corporation, the Forestry Commission must maintain self-sufficiency by collecting fees (Forestry Commission 2001). A doubling of the annual allowable cut will facilitate the Forestry Commission's survival. The restructuring of the FC will likely have a tremendous negative effect on Ghana's ability of achieving sustainable forest management.

## SUGGESTED IMPROVEMENTS TO RENEWABLE RESOURCE POLICY

One of the main objectives of the study was to look for ways to improve Ghana's renewable resource policy to increase its effectiveness in dealing with key forms of environmental degradation occurring in the country. After carrying out a review of environmental degradation occurring in Ghana and a study of the associated resource policy, it is clear that on the whole Ghana has good policies in place to deal with

environmental degradation. If existing policies were successfully implemented in the field they would be effective in decreasing environmental degradation. Many of the policies have not been successfully implemented in the field. Ghana needs to expend more effort ensuring the policies are implemented in the field.

Incorporating Local People into Forest Management

The current state of Ghana's forest resource speaks volumes in terms of how effective the government has been in overseeing the nation's forests since forest management began in the early 1900s. As discussed earlier in the thesis, much of the degradation of forest reserves is attributable to the alienation of local people. The importance of collaborative management is recognized in Ghana's renewable resource policy however no solid strategies are provided to increase local involvement.

Forest fringe communities could be 'bought' back into the forest management process. The idea behind getting local people involved in forest management is to harness their skills and resources in helping to manage and protect forested areas. Winning the support of local people requires providing them a fair share of the financial benefits realized through forestry operations carried out on their lands and considerable input in management level decision-making as local people who are passive onlookers in the process will not contribute their skills (Kotey *et al.* 1998). Forest management in Ghana will have to undergo substantial restructuring to provide local people with effective and meaningful input into the process. The following six paragraphs describe

how the forest management process should be restructured so as to incorporate forest fringe communities into the process through collaborative forest management.

The overhaul of forest management will require drastically altering the role of the FSD. The role of the FSD will change from the current system in which they determine how the forest is managed, to playing a supporting role to the forest fringe communities (FFC) who become the primary managers of the forest. The FFCs will be represented by a local citizens committee (LCC) which will be directly responsible for overseeing forest management. Each FFC with a direct stake in the forest will put forth one or two elected representatives from their community to represent the community's views on the LCC.

LCC members are not likely to have much of a forest management background. The FSD will overcome the issue by holding training sessions to provide LCC members with an understanding of forest management activities. The LCC will also bring into their employ a few professional foresters – individuals who have graduated from a reputable university forestry degree program. The professional foresters will essentially become members of the LCC and will assist the LCC in managing the forest.

The LCC will develop a forest management plan (FMP) for their forest. The FMP is a strategic document outlining how the forest is to be managed over a five year term. The LCC will take the lead role in developing the FMP – however the FSD will also provide considerable input into the process to ensure the FMP provides for the sustainable management of the forest. The FSD will facilitate the process by creating

forest management guidelines that provide direction to the LCC in managing their forest. The FMP will require approval from the FSD before being put into effect. The key components of the FMP will include:

- the main management objectives of the LCC;
- a forest inventory – including types of tree species their sizes and location, and areas of concern within the forest (*e.g.*, areas adjacent to water bodies, areas with NTFPs of special interest, sacred groves, and wildlife habitat areas);
- harvesting plans (*i.e.*, which trees would be harvested within the five year period and where to locate roads and skid ways to access the trees);
- forest protection strategies to protect the forest from bushfires, illegal logging activities, and agricultural expansion into the forest; and
- renewal strategies and a renewal plan outlining activities to be carried out on the forest.

Once the FMP is approved, the FSD will grant a forest management licence (FML) to the LCC to manage the forest for a five year term. Once the licence has been granted the FSD will organize a public auction to find a buyer for the wood to be harvested over the five year period. The auction will involve inviting forest companies to bid on the standing timber. If a suitable sale price is reached, the timber rights will be sold. If no suitable buyer is found, another auction will be held at another point in time in the near future. Once the timber rights have been sold the FSD will then assist the LCC in finding a qualified logging company to carry out harvesting on the forest over the five year term. Logging companies will be sought that have the proper equipment,

staff, and know-how to carry out reduced impact logging on the forest. The logging company will be employed by the LCC.

Throughout the five year period the FSD will be involved in carrying out field site-inspections to ensure the LCC is abiding by strategies put forth in the FMP. The site-inspections will place considerable emphasis on examining the success with which the LCC is achieving forest renewal. The LCC will develop renewal strategies – which will be included in the FMP – outlining how they will monitor forest renewal to ensure adequate stocking levels are maintained. Indigenous tree species will be planted to fill any poorly stocked areas. In addition to maintaining a healthy forest, renewal activities also provide several opportunities for the establishment of small-scale businesses in FFCs – these opportunities are discussed in the next section.

The contractual obligations associated with the FML will focus on the ability of the LCC to achieve strategies outlined in the FMP. During the fourth year – of the five year term of the forest management licence – the FSD will evaluate how successful the LCC has been in implementing the FMP. The FSD would determine if the FML should be extended to the LCC for another five year term. If the FSD determines the LCC had been unable to successfully implement the FMP, the LCC membership would be restructures to create a stronger LCC for the next five year term. Table 16 provides a summary of the key roles and responsibilities of the FSD and LCC in the proposed collaborative management approach.

**Table 16. Summary of the Roles and Responsibilities of the FSD and the LCC in the Proposed Collaborative Forest Management Approach.**

| Organization | Roles and Responsibilities |
|---|---|
| LCC | Key Role:<br>• represent the interests of FFCs in the forest management process<br><br>Key Responsibilities:<br>• develop a FMP – in association with the FSD – outlining:<br>• the management objectives of the FFC<br>• an inventory of the forest resource<br>• a harvesting strategy to be carried out on the forest over the five year term<br>• a strategy to protect areas of concern located within the forest<br>• a forest renewal strategy<br>• a strategy to protect the forest from damaging agents |
| FSD | Key Role:<br>• work in partnership with the LCC to ensure the forest is managed on a sustainable basis<br><br>Key Responsibilities:<br>• create guidelines to provide direction to the LCC in managing the forest resource<br>• assist the LCC in developing a FMP<br>• appove FMPs that will achieve sustainable forest management<br>• carry out on-site field inspections to ensure strategies contained in the FMP are implemented in the field<br>• facilitate the public auction of standing timber<br>• link the LCC with a qualified and reputable logging company<br>• monitor community renewal efforts<br>• determine if the FML should be extended at the end of the five year term |

## Increasing the share of benefits to forest fringe communities

Forest fringe communities are entitled to a significant share of the benefits accrued from activities carried out in their forests. Ensuring communities receive a fair share of benefits is crucial to winning their support in forest management. The current revenue sharing arrangement is insulting, with a paltry five percent of the total stumpage going to the relevant landowning stool (Kotey *et al.* 1998) and no real benefits trickling

down to the local people: the resource owners (Inkoom 1999). Determining the appropriate revenue sharing arrangement for the proposed collaborative management system will require a trial and error process. Income generated off the forest resource will have to be monitored in an open and transparent manner to ensure both parties receive their fair share. Thought will have to be given to how the communities can use the new income being generated off their forests. The community would likely benefit the most by having the income go into a fund used to assist the community's development. The fund could initially be used to construct infrastructure such as schools, roads, and churches. Once the required infrastructure had been developed, the funds' focus could be shifted to providing educational scholarships and loans to develop small-scale businesses within the community.

Several areas exist in which community members could develop small-scale forestry related businesses:

1) licence individuals to harvest small volumes of timber from the forest to provide lumber for community use;
2) establishment of small-scale tree nurseries to supply indigenous tree species for forest renewal activities as well as supplying individuals interested in planting trees in their agricultural fields;
3) development of community run commercial plantations to provide timber for the forest industry; and
4) establishment of businesses to carry out forest renewal activities following commercial harvesting operations or in areas of the forest with low stocking levels.

The establishment of small-scale businesses would be beneficial to the community as they would provide employment and help community members diversify their skills.

# CONCLUSIONS AND RECOMMENDATIONS

The study was undertaken to achieve three main objectives: examine the agents and underlying causes of the most pressing forms of environmental degradation occurring in Ghana, determine how effective Ghana has been in creating and implementing policies to minimize environmental degradation, and to provide recommendations to strengthen Ghana's renewable resource policy.

Significant amounts of environmental degradation are occurring in Ghana. Deforestation is likely the most damaging form due to Ghanaians heavy dependence on forests which provide essential environmental services and a wide array of products. The main agents of deforestation in Ghana include commercial forestry, Ghanaians heavy dependence on fuelwood as an energy source, and bushfires. The two main underlying causes of deforestation were determined to be the alienation of local people and rapid population growth rates. The alienation of local people has occurred as a result of losing their rights to access forest resources.

Five aspects of Ghana's renewable resource policy were examined to determine how effective the policies would be in minimizing environmental degradation. The five aspects included: the Forest and Wildlife Policy of 1994, the Timber Resources Management Acts, the Control and Prevention of Bushfire Law of 1990, the National Land Policy and The National Population Policy.

Overall, the study found Ghana's renewable resource policy to be fairly comprehensive, covering a portion of the agents and causes of deforestation. The majority of the policies include realistic strategies to achieve policy objectives. Important issues not adequately addressed in Ghana's renewable resource policy include improving the forest industry, improving forest management practices, controlling bushfires, improving the land administration system, and reducing population growth rates. Most of the policies do not make the crucial connection between population growth and environmental degradation. Recommendations to deal with these issues are provided in the next section.

While room for improvement exists, it was determined the policies would be beneficial in decreasing current levels of environmental degradation provided polices are implemented in the field. The main reoccurring weakness of Ghana's renewable resource policy involves translating strategies from words on paper to actions in the field. Ghana must place much more effort into implementing strategies.

## RECOMMENDATIONS

Ghana's renewable resource policies should be improved by focusing on the following high priority areas:

1. Improving the forest industry

a) Reduce the overcapacity of Ghana's lumber producing industry by re-introducing the competitive bidding aspect of Timber Utilization Contracts. Competitive bidding could be further improved by having forest companies bid on standing timber, thus providing the Ministry of Lands and Forestry a form of bargaining power if bid prices are too low.

b) Provide incentives to encourage the industry to shift to value added processing, such as:

    i. the removal or reduction of premiums charged on the export of value added products;

    ii. assist companies in obtaining interest free, or low interest loans to facilitate the acquisition of tertiary processing equipment;

    iii. reduce the overcapacity of Ghana's wood industry;

    iv. increase stumpage rates to reflect the true value of the resource;

    v. improve the collection of forest fees to ensure an appropriate return on the sale of commercial timber; and

    vi. carry out a market analysis to determine the types of tertiary processing Ghana's wood industry should focus on.

c) Examine forest fees to ensure they reflect the true value of the resource.

    i. Compare Ghana's forest fees to those charged in other countries.

    ii. Undertake an examination of wood industry production costs to ascertain if Ghana's wood industry could absorb the cost of increased forest fees.

2. Improving forest management practices
    a) The Government of Ghana should provide funding to the FC to enable the FC to continue managing forests in Ghana without increasing the AAC.
    b) Incorporating local people into the forest management process – through collaborative management – needs to be taken more seriously.
        i. The Ministry of Lands and Forestry should lead by example and involve local forest fringe communities in the formulation of forest policy.
        ii. The Collaborative Forest Management Unit of the FC should be strengthened to speed up the implementation of collaborative management.
        iii. Assign the FSD the responsibility of developing and implementing a reduced impact logging system tailored to Ghana's forests.
        iv. Initiate research and feasibility studies to examine the potential of exporting NTFPs from Ghana's forests.
    c) The working relationship between the FSD and Wildlife Division should be strengthened to facilitate the development of forest management activities that are more conducive to generating conditions favorable to Ghana's wildlife populations.

d) Examine the potential of developing modified harvesting systems that have a reduced impact on wildlife populations.

e) Illegal chainsaw operations must be solved. The long term solution to the issue will require bringing forest fringe communities into the forest management process. Incorporating local people into forest management takes considerable time. The following strategies should be applied as interim measures:

   i. Find an alternative source of wood to supply the furniture manufacturing industry – currently the main destination for chainsaw lumber. Commercial plantations are a viable option; they could begin providing considerable volumes of wood within a short period of time given Ghana's favorable climatic conditions.

   ii. Undertake a feasibility study to examine the potential of licensing and regulating chainsaw operators to provide lumber to forest fringe communities.

   iii. Make legal portable saw mills and train personnel to produce "higher" quality lumber.

3. Controlling Bushfires

   a) Establish no-harvest, or reduced-harvest buffers in the peripheral zone of forests in high risk bushfire areas.

   b) Encourage the creation/maintenance of values on the land. These values, such as individual trees planted on peoples land or Community Protection

Areas, are a form of investment local people will want to protect from bushfires.

c) Encouraging grass-roots level anti-bushfire initiatives, developed by the community to protect the community's land. Initiatives should consist of a strategy to protect the areas as well as a local by-law outlining what the community feels is an appropriate deterrent to deal with people whose negligent use of fire results in a bushfire.

d) Increasing coordination amongst government agency extension units to ensure first the various agencies are sending a unified message and secondly to make the most of the limited extension resources.

4. Improving the Land Administration System by creating land courts to instill discipline into the land administration system.

5. Reducing population growth rates

   a) Develop strategies to try and increase the level of girl child education, especially in rural areas.

   b) Develop new strategies which place more emphasis on changing attitudes amongst men, as they play a critical role in determining family size.

6. The Forest and Wildlife Policy failed to recognize bushfires and Ghanaians heavy reliance on fuelwood as being crucial causes of forest degradation. Future forest policies need to be more comprehensive, providing strategies to mitigate all major underlying causes of forest degradation.

7. Initiatives must be taken to encourage the establishment locally operated commercial plantations to supply fuelwood. Not only would these plantations be beneficial as they would help decrease the stress placed on Ghana's forest resources, they would also provide small-business opportunities for people living in rural areas. Effective initiatives include the provision of small-scale loans to assist in the establishment of plantations as well as assisting local people in obtaining tree seedlings.

8. The following improvements should be made to the National Land Policy:
   a) Develop a definition for the term 'protected areas' and a clear description as to what is, and what is not permitted in such areas.
   b) Incorporate the role of traditional authorities into the policy, as they play the key role in allocating land in Ghana. A policy that tries to change the way lands are used has little chance of success without having the traditional authorities involved in the process.

9. Examine forest fees to ensure they reflect the true value of the resource.
   a) Compare Ghana's forest fees to those charged in other countries.
   b) Undertake an examination of wood industry production costs to ascertain if Ghana's wood industry could absorb the cost of increased forest fees.
10. Examine the commercial potential of harvesting NTFPs from Ghana's forests.
11. Examine the potential of developing modified harvesting systems that have a reduced impact on wildlife populations.

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# APPENDICES

# APPENDIX I: FOREST AND WILDLIFE POLICY 1994

**Republic of Ghana**

# FOREST AND WILDLIFE POLICY

MINISTRY OF LANDS AND FORESTRY

ACCRA 24TH NOVEMBER 1994

## FOREWORD

The need for specific government guidance and control of forestry activities in Ghana has become necessary due to changes that have occurred in the nature of Ghana's forests since the adoption of the 1948 Forest Policy. This need also underpins our sensitivity to the serious reduction in the forest land area and the increasing local and international outcry over environmental issues relating to the forest. Besides, forestry plays a major role in the growth and development of the Ghanaian economy and the maintenance of environmental quality.

Between 1948, when a forest policy was adopted and the early 1980s, Ghana's stance has remarkably consistent. The 1948 forest policy provided for the creation and management of permanent forest estates, research in all branches of scientific forestry, maximum utilization of areas not dedicated to permanent forestry, provision of technical advice and cooperation in schemes for the prevention of soil erosion and in landuse plans. However, with increasing demand for forest land for agricultural purposes due to population pressure, advances in science and technology, growing ecological importance of the forest in terms of genetic biodiversity and wildlife, institutional changes, and the increasing need for popular participation in resource management, the underlying justification for the earlier policy no longer appeared applicable. It became obvious that most of the provisions in the old policy could not adequately deal with the totality of the emerging issues. Consequently the government introduced remedial measures to strengthen forestry sector institutions and to reform policies. Though these measures have, in part, reduced the scale and frequency of environmental losses, there is still the need for a new forest policy that provides a new forest of policy that provides a new set of principles for sustainable forest management and establishes key priorities for its future development.

The new forest policy therefore, provides an additional basis to develop a national forest estate and a timber industry that provides the full range of benefits required by society in a manner that is ecologically sustainable and that conserves our environmental and cultural heritage. The new policy promotes public participation in the share of benefits and responsibilities in forest management and encourages integrated coordinated research in forest-related issues. It also provides for conservation of all valuable wildlife habitats and communities.

In contrast to the past, the new forest and wildlife policy reflects the current thinking of all relevant stakeholder groups in the forestry sector who were proactively involved in all the stages in the policy formulation. I am grateful to all such groups, especially the Forestry Commission, the Food and Agriculture Organization of the United Nations, and the forest industry organizations for their active participation in the formulation of this forward-looking policy.

Forest and wildlife have together provided a wide range of socio-economic and environmental benefits to Ghanaians since time immemorial and will continue to do so if we are able to manage the resources sustainably. In this regard, it is the duty of all Ghanaians to strive towards attaining the objectives of this policy.

DR KWABENA ADDJEI
Minister of Lands and Forestry

September 20, 1995

## 1.0 PREAMBLE

1.1 Ghana has been richly endowed with natural resources which are vital for the country's development and future prosperity. Timber from the tropical high forests has traditionally ranked third as a foreign exchange earner, while fuelwood, bushmeat, medicinal plants and other natural products have continued to contribute significantly to the welfare of most Ghanaians. Unfortunately, previous exploitation of these resources to satisfy Socio-economic needs has resulted in deforestation and destruction of wildlife habits, as well as resource depletion and degradation. This has been due to the ever-increasing pressure from rapid population growth, leading to clearing of forests for farming, illicit logging and surface mining, uncontrolled bush fires, collection of fuelwood and excessive hunting and poaching of wild animals.

1.2 The country recognizes the interdependency of forests and wildlife and the need to take appropriate measures to optimize resource utilization, to ensure future supplies of wood and non-wood products and to manage national forest and wildlife resources so as to maintain the ecological balance and the diversity of the natural environment. Therefore, as a major step towards balancing these competing demands on the limited natural resources, this Forest and Wildlife Policy has been developed to out line the principles, aims and objectives which will guide the sustainable development of both sectors. It includes a review of past and present policies in the light of new perceptions and sets out a comprehensive list of immediate strategies to be employed towards optional achievement of the stated policy objectives.

## 2.0 BACKGROUND

2.1 The history of forestry in Ghana dates back to 1906 when legislate was enacted to control the felling of commercial tree species, felled by creation of the Forestry Department in 1908. The demarcation and reservation of the forest estate was largely completed by 1939 and a Forest Policy was adopted in 1948. The policy provided for creation of a permanent forest estate for the welfare of people, protection of water supplies, maintenance of favorable conditions for agricultural crops, as well as public education and research. However, it mainly emphasized the sustained supply of timber for the wood industry and promoted the exploitation and eventual demise of unreserved forests.

2.2 Since the adoption of the forest policy, the wood industry grew steadily up to the 1970s, but like other sectors of the economy, it declined drastically until the introduction of the Economic Recovery Programme in 1983. About that time, the country suffered from the severe effects of a prolonged drought, followed by devastating wild fires, which forcibly awakened the entire population to the environmental consequences of deforestation. During the past decade, the government attempted to stimulate wood

processing and exports through a range of initiatives which, hindered by inadequate institutional capability, yielded varied results.

Wildlife Conservation

2.3 Game and wildlife conservation also commenced in the early years of this century, the Department of Game and wildlife being formed in 1965. Wildlife reserves and conservation Policy was published in 1974. Rooted in the general culture and traditions of the country, this policy recognized the economic importance of wildlife resources to the livelihood of people, the role of protected areas in meeting the demand for bushmeat and the importance of engaging local communities in protected areas development. However, certain shortcomings have become evident in particular, the need to obtain the acceptance of local communities directly affected by conservation measures and to modify the emphasis placed on preservation of useful animals. Unfortunately, services in the sub-sector also declined along with the worsened conditions of the national economy.

2.4 Strongly concerned about the need to protect valuable resources against further depletion and environmental degradation, the government initiated a series of donor-assisted projects, culminating in the Forest Resource Management Project and the Forestry Planning Project. These projects have adopted a comprehensive approach towards sectoral development through the strengthen of forest management and relevant institutions, policy reforms, forest inventory, a rural forestry programme and preparation of plans for management of National Parks and protected areas.

International Concern about the Global Environment

2.5 The past decade has witnessed increased attention of the world community to issue of conservation and wise of natural resources, culminating in the 1992 Earth Summit organized by the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. In an effort to halt the deleterious effects of deforestation, global warming and climatic change, certain European countries have unilaterally moved to restrict importation of tropical timbers. In response, the International Tropical Timber Organization, of which Ghana is an active member, has launched its Target 200, aimed at ensuring that trade in tropical timber will be sourced from sustainably managed forests by the year 2000.

2.6 In the wildlife sector, there has been a shift from the traditions preservation approach in protected area management to the more flexible concept of conservation through sustainable use. The World Conservation Strategy together with the reports of the World Commission on Environment and Development, particularly the Convention on Biological conservation and development are not separate challenges but are inexorably linked and need to be addressed as a complex system of cause and effect. Also, there has been increasing recognition that individual protected area are rarely self-sustaining biological islands but integral components of the bio-physical and social

landscape and, if protected area are to be developed sustainably, they should help to meet the basic needs of local people in an equitable way.

## 3.0 GUIDING PRINCIPLES

3.1 The guiding principles for this policy are based on both national convictions and international guidelines and conventions. From the national standpoint, such principles are embodied in the Constitution of the Fourth Republic, the Environment policies of the new parliament government, the Environmental Action Plan, as well as agreements emanating from existing projects, particularly the Forest Resource Management Project and its various studies. Ghana has also endorsed certain international principles including those contained in the Guidelines for Tropical Forest Management published by the International Tropical Timber Organization, the Rio Declaration and Forest Principles, the African Convention on Wildlife Conservation, the Convention on International Trade in Endangered Species and others.

3.2 In enunciation this policy concerning the country's forest and wildlife resources, the Government of Ghana recognizes and confirms:

3.2.1 the rights of people to have access to natural resources for maintaining a basic standard of living and their concomitant responsibility to ensure the suitable use of such resources;

3.2.2 the nation's viability is dependent on the wise use of the forest and wildlife resources as part of an integrated land use policy, because of their contribution to the economy in maintaining vital ecology and life-sustaining processes and conserving pools of genetic material that scientific, cultural and educational advancement;

3.2.3 the success of sustainable resource management is directly related to continued political support at the highest levels, as well as provision of strong incentives to encourage responsible use, e.g. long-term concessions, equitable access, appropriate fees;

3.2.4 the need for economic and development incentives to stimulate private enterprise and encourage respect for regulations, thus offsetting real and perceived costs imposed by loss of access or restriction on use;

3.2.5 the importance of national accounting for the costs of resource depletion and impact on the environment;

3.2.6 the need to incorporate traditional methods of resource management in national strategies where appropriate;

3.2.7 the need for support by appropriate legislation in harmony with laws concerning related sectors and for policy revision in the light of changing circumstances and updated information;

3.2.8 a share of financial benefits from resource utilization should be retained to fund the maintenance of resource production capacity and the benefit of local communities;

3.2.9 forest and wildlife fees and taxes are considered as incentives to encourage more rational and less wasteful utilization and should be revised according to market forces, and particularly to increase production of value-added wood products for export;

3.2.10 the timber industry should be transformed from a high volume, low value business to a law volume, high value trade based on sustainable forest management;

3.2.11 the maintenance of economic reforms which recognize the private sector as the engine of growth;

3.2.12 the need to improve the state of the environment;

3.2.13 the importance of appropriate and efficient land use and security of land tenure for sustainable development of forest and wildlife resources;

3.2.14 the need to encourage competitive industries based on local raw materials and to pay close attention to international trade;

3.2.15 the need to develop a decentralized participatory democracy by involving local people I matters concerned with their welfare;

3.2.16 the urgent need for addressing unemployment and supporting the role of women in development.

3.3 In view of the importance of local people in pursuing these principles, the Government proposes to place particular emphasis on the concept of participatory management and protection of forest and wildlife resources and will seek to develop appropriate strategies, modalities and programmes in consultation with relevant agencies, rural communities and individuals.

## 4.0 POLICY STATEMENT

Aims

4.1 The Forest and Wildlife Policy of Ghana aims at conservation and sustainable development of the nation's forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society.

Objectives

4.2 Specially, the objectives of this policy are to:

4.2.1 Manage and enhance Ghana's permanent estate of forest and wildlife resource for preservation of vital soil and water resources, conservation of biological diversity and the environment and sustainable production of domestic and commercial produce;

4.2.2 Promote the development of viable and efficient forest-based industries, particularly in secondary and tertiary processing, so as fully utilize timber and other products from forests and wildlife resources and satisfy domestic and international demand for competitively-priced quality products;

4.2.3 Promote public awareness and involvement of rural people in forestry and wildlife conservation so as to maintain life-sustaining systems, preserve scenic areas enhance the potential of recreation, tourism and income-generating opportunities;

4.2.4 Promote research-based and technology-led forestry and wildlife management, utilization and development to ensure resource sustainability, Scio-economic growth and environmental stability;

4.2.5 Develop effective capability at national, regional and district levels for sustainable management of forest and wildlife resources.

## 5.0 STRATEGIES

5.1 In pursuing each stated policy objective, the government will focus on priority issues by employing the strategies outlined in the following paragraphs. Particular emphasis will be placed on the use of market mechanisms to determine realistic product prices and to stimulate specialization and efficiency in resource utilization. These strategies will be further expanded within the corporate statements and operational plans of respective institutions and ultimately, will be incorporated in a national plan to be

prepared with the involvement of all concerned agencies. During implementation, all strategies will be closely monitored to ensure that the desired results are being achieved.

Permanent Forest and Wildlife Estate

5.2 Existing legislation has established 282 forest reserves and 15 wildlife protected areas which occupy more than 38,000 km or about 16 percent of the country's land area. Outside the gazetted areas, an estimated 4000 km of forests still exist, from which the bulk of timber is now being extracted without adequate control while uncontrolled hunting persists in other unprotected areas. Within forest reserves, some 60,000 hectares of plantations have been established, while private interests and communities are planting trees on an increasing scale around the country Emphasis will be placed on reforestation initiatives towards restoring a significant proportion of the country's original forest cover.

5.3 In addition to the normal responsibilities and programmes of the resource management institutions, the government will employ the following strategies in pursuit of the stated policy objective:

Reserve Expansion

5.3.1 development of an integrated national land aimed at the suitable use of all natural resources, including particularly the dedication of various land categories with potential for nature protection and production of timber and other products;

Management and Utilization

5.3.2 inclusion of unreserved forests under Forestry Department's management system for regulation of uncontrolled harvesting, expeditious collection of relevant fees and ultimate conformity with criteria for sustainable resource development;

5.3.3 revision of resource management standards and techniques for preparation of detailed prescriptions and plans to guide the sustainable management of forest reserves and wildlife protected areas, as well as unreserved forests;

5.3.4 enforcement of specifications prescribed in resource management plans, utilization contracts and logging manuals to ensure compliance of authorizes users with approved harvesting practices and controls;

5.3.5 award of timber rights on the basis of competitive bidding and periodic audit of forest utilization operations to ensure compliance with forest management specifications and environmental protection standards;

5.3.6 regular review of forest and wildlife fees to reflect the economic value of the resource and to recover optimum revenues for supporting the cost of sustainable resource management and development;

5.3.7 establishment and management of a network of National Parks and protected area categories in order to conserve representative samples of the country's biotic communities;

Rehabilitation and Development

5.3.8 promotion of resource development programmes aimed at reforesting suitable harvested sites, rehabilitating degraded mining areas, afforesting denuded lands, regenerating desired wildlife species and habitats and sustainably developing wildlife potential;

Protection

5.3.9 regulation of utilization and trade in highly valued and endangered species in order to eliminate the threat of extinction, encourage regeneration and ensure future supplies;

5.3.10 encouragement of local community initiative to protect natural resources for traditional, domestic and economic purposes, and support with the reservation of such lands to enable their legal protection, management and sutainably development;

5.3.11 initiation of integrated planning by relevant agencies for joint action prevent and suppress wildfires in fire prone areas, illegal farming and encroachment in protected areas, chemical and solid waste pollution by industrial and domestic activities;

5.3.12 introduction of environmental impact assessment as a prerequisite for resource development and utilization projects, in compliance with approved standards.

Viable Wildlife and Forest-based Industries

5.4 The government will seek to create a climate of confidence among entrepreneurs to foster industrial modernization and innovations necessary for rejuvenation of the trade and to stimulate development of wildlife-based industries. Therefore, the following strategies will be pursued within the framework of a free market economy while maintaining a balance between industrial capacity and sustainability of the resource:

Enabling Environment

5.4.1 deregulation and streaming of bureaucratic controls on wood export marketing to enable private sector initiatives for maintaining competitive advantages;

5.4.2 enhancement of private sector dialogue to stimulate entrepreneurship, particularly in the timber trade and tourism, and to overcome constraints affecting industrial and commercial development in the sector;

5.4.3 introduction of a competitive procedure for allocation of forest utilization contracts (timber and wildlife concessions) to eliminate unnecessary speculators and to ensure that capable and properly equipped processors and entrepreneurs have access to adequate and sustainable resources;

Incentives and Assistance

5.4.4 Encouragement of value-added process in timber, kiln-drying of lumber, optimum utilization of mill residues and eventual phasing out of exports of unseasoned, rough sawn lumber to maximize income and related benefits;

5.4.5 development of the marketability and utilization of abundant lesser-used timber species to obtain maximum benefit from the sustainably allowable cut;

5.4.6 promotion of investment in feasible projects for commercial wild animal production and forest plantations to ensure sustainable supplies of marketable products;

5.4.7 encouragement of improved milling efficiency and adoption of grading rules to increase productivity and maximize Ghana's competitive advantage;

5.4.8 initiation of specialized training and apprenticeship schemes for wood processing operators and produce graders to improve productivity and quality;

Development of Domestic Markets

5.4.9 promotion and development of a well-structured local market as an essential component of the timber industry in order to satisfy domestic needs and to maximize utilization of harvested timber.

Public Education and Participation

5.5 The government wishes to increase public awareness and people's involvement in conservation of forest and wildlife resources, particularly where they directly affect the livelihood of communities and the stability of the environment. Emphasis will be placed on integrated efforts to reduce the incidence of uncontrolled wildfires and to rationalize the demand and supply of fuelwood to ease the pressure on existing forests. Accordingly, relevant strategies will include:

Public Education

5.5.1 promotion and implementation of public education programmes to increase awareness and understanding of the role of trees, forest and wildlife and the importance of conservation;

5.5.2 promotion of agroforestry among farmer and cultivators to enhance food and raw material production and environmental protection;

5.5.3 dissemination of research information to update the public on current knowledge regarding resolution of technical problems in growing, management and utilization of timber and wildlife products;

5.5.4 participation in industrial fairs, seminars and trade promotion activities to stimulate added investment and growth in marketing of timber and wildlife products and services;

Public Participation

5.5.5 development of consultative and participatory mechanisms to enhance land and tree tenure rights of farmers and ensure access of local people to traditional use of natural products;

5.5.6 promotion of national tree planting programmes as positive community-building actions which generate raw materials and income while improving the quality of the local environment;

5.5.7 initiation and maintenance of dialogue with all interests through a national advisory forum (i.e. the Forestry Commission) and related district conservation committees to ensure active public participation in forestry and wildlife matters;

5.5.8 initiation of continued contract and liaison with the local authorities and communities to pursue integrated development activities related to sustainable resource management.

Relevant Research

5.6 There is a critical need to keep abreast of advances in scientific knowledge and to adapt and disseminate such advances, where appropriate, to improve the nation's ecological management and technological development. Faced with limited resources, greater emphasis will be placed on research activities that can be of immediate benefit to users and clients. Therefore, the following strategies will be pursued in the medium-term:

Ecological

5.6.1 promotion of user-oriented instigations into the growth and success of important tree species and forest types, wildlife species and habitats, and the development of appropriate systems for their sustainable management under a wide variety of conditions:

5.6.2 encouragement of studies by institutions of higher learning to increase knowledge of the biological diversity of the country and its potential for future applications in socio-economic development:

Economic Applications

5.6.3 Promotion of client-oriented research into problems and prospects affecting viable processing and marketing of major timber species capable of being managed sustainably:

5.6.4 Promotion of commissioned studies likely to enhance economic returns and sustainability, including aspects such as downstream processing of preferred timber species, utilization of suitable sites and habitats for tourism, hunting and bushmeat production, etc.

Extension

5.6.5 promotion of the development of research database on relevant forestry and wildlife knowledge for effective dissemination to a wide spectrum of users, particularly in industry and rural communities.

Effective Capability

5.7 Government has been investing considerably in the strengthening of sectoral institutions with the assistance of international donors. Already, there are positive signs of improved planning and better coordination within the sector. These capacities building activities will be continued in conjunction with the following strategies:

Institutional Strengthening

5.7.1 reorganization of Forestry and Wildlife Departments, as autonomous or semi-autonomous agencies, to focus on upgrading of staff performance and improved monitoring, coordination and accountability;

5.7.2 initiation of inter-ministerial cooperation and maintenance of an interagency coordinating committee to coordinate plans and programmes and review how policy

goals can effectively accomplished, and in particular to develop a long-term master plan to guide implementation of this policy and strategies;

5.7.3 cooperation with international entities, trade associations, private interest groups an non-governmental organizations concerned with sustainable management of forest and wildlife resources in order to benefit from technological advances, technical assistance and action-oriented initiatives;

5.7.4 review of legislative instruments and administrative arrangements to ensure effective resource management and administration towards sustainable development, and in particular to prevent any farming, logging sand-winning or galamsey activities from taking place along the banks of streams, rivers and lakes;

5.7.5 development of adequate funding arrangements to ensure continuity of resource management services;

5.7.6 development of mechanisms for review and adjustment of this policy as deemed appropriate, from time to time;

Capacity Building

5.7.7 improvement of capacity for accurate accounting and timely, collection of resource utilization revenues in order to augment the operational and support finances of respective institutions;

5.7.8 implementation of human resource development programmes aimed at improved planning and management capability in sector institutions, industrial and community enterprises to ensure satisfactory performance and achievement of objectives and targets;

5.7.9 establishment of suitable database systems and information linkages to facilitate decision-making and policy analysis.

DR KWABENA ADJEI

Minister of Lands and Forestry

Accra

Date: 24 November 1994

# APPENDIX II: TIMBER RESOURCE MANAGEMENT ACT, 1997

## ACT 547

# TIMBER RESOURCE MANAGEMENT ACT, 1997
## Act 547

## ARRANGEMENT OF SECTIONS

Section

ACT 547

# THE FIVE HUNDRED AND FORTY-SEVENTH ACT OF THE PARLIAMENT OF THE REPUBLIC OF GHANA ENTITLED

# THE TIMBER RESOURCE MANAGEMENT ACT 1997

**AN ACT to provide for the grant of timber rights in a manner that secures the sustainable management and utilization of the timber resources of Ghana and to provide for related purposes.**

DATE OF ASSENT: *17th March, 1998*

**BE IT ENACTED BY Parliament as follows—**

**1. Prohibition from harvesting timber without timber utilization contract—**

No person shall harvest timber from any land to which section 4 of this Act applies unless he holds timber rights in the form of a timber utilization contract entered into under this Act in respect of the area of land concerned.

**2. Qualification for timber utilization contract—**

No timber utilization contract shall be entered into with any person under this Act unless the person is a body incorporated under the Companies Code, 1963 (Act 179) or under the Incorporated Private Partnerships Act, 1962 (Act 152).

**3. Application for timber rights—**

(1) Procedure for application for timber rights shall be as prescribed by regulations made under this Act.

(2) Without prejudice to subsection (1) of this section an application for timber rights shall be made in writing to Forestry Commission which shall immediately refer the application to the Timber Rights Evaluation Committee established under section 5 of this Act.

(3) The application shall be accompanied with-

(a) a harvesting plan prepared in accordance with sustainable management of timber resources;

(b) an assessment of the likely environmental effect and proposed programme to redress any such effects;

(c) evidence of the financial ability of the applicant to operate the area of land subject to his contract;

(d) evidence of the capability of the applicant to operate the area of land subject to his contract;

(e) proposals to assist in addressing social needs of the communities who have interest in the applicant's proposed area of operations; and

(f) such other relevant information or documents as the Commission may request.

**4. Land subject to timber rights-**

(1) Timber rights may be granted under a timber utilization contract in respect of-

(a) lands previously subject to timber rights which have expired and are suitable for re-allocation;

(b) unallocated public or stool lands suitable for timber operations in timber production areas; and

(c) alienation holdings.

(2) No timber rights shall be granted in respect of-

(a) land with forest plantations;

(b) land with timber grown or owned by any individual group;

(c) land subject to alienation holding; or

(d) lands with farms

without the authorization in writing of the individual, group or owner concerned.

**5. Establishment of Timber Rights Evaluation Committee and its functions-**

(1) There is hereby established a Timber Rights Evaluation Committee which shall be a committee of the Commission and shall be composed of-

(a) the Chief Conservator of Forests of the Forestry Department or his representative who shall not be below the rank of a Deputy Chief Conservator of Forests;

(b) the Planning Officer of the Forestry Department;

(c) the Chief Administrator of the Commission;

(d) the Administrator of Stool Lands;

(e) the representative of the Lands Commission on the Forestry Commission;

(f) a representative of the Ghana Institute of Professional Foresters; and

(g) one other person appointed by the Minister;

(2) The Chief Conservator of Forests or his representative shall be the Chairman of the Committee.

(3) The Evaluation Committee shall regulate the procedure at its meetings.

**6. Functions of the Evaluation Committee-**

(1) The functions of the Evaluation Committee are-

(a) to evaluate applications for timber utilization contracts in accordance with qualifications and criteria provided by regulations made under this Act; and

(b) to rank the qualified applicants on merits through a competitive procedure prescribed by regulation under this Act.

(2) For the purpose of subsection (1) of this section the Evaluation Committee may in respect of any evaluation-

(a) request for such relevant documents and information;

(b) co-opt such persons as it considers necessary.

(3) The Evaluation Committee shall submit all evaluation reports together with recommendations thereon to the Commission within 42 days of receipt of the application.

**7. Grant of timber rights-**

(1) The Commission shall with 30 days of receipt of the evaluation report submit the report and its recommendations on it to the Minister.

(2) The Minister shall on the basis of the recommendations of the Commission grant the timber rights and shall for that purpose enter into a timber utilization contract on behalf of the President with the successful applicant.

**8. Terms of contract-**

A timber utilization contract entered into under this Act shall be subject to such terms and conditions as shall be specified in it including-

(a) the limitation of the area of land to which the contract relates;

(b) the period of operation of the contract;

(c) an undertaking by the holder of the contract to adhere to any prescriptions laid down by the Forestry Department;

(d) an undertaking by the holder to execute a reforestation plan during the period of the contract to the satisfaction of the Chief Conservator of Forests;
(e) provisions for prompt payment of rents, royalties, compensation and such management and service charges as prescribed by law;
(f) annual rent payable to the landlord or owner of the area of land relevant to the grant;
(g) the periodic review of the operations of the holder by the Forestry Department;
(h) the submission to the Forestry Department of a contract area plan every five years, prepared by a professional forester in accordance with the Logging Manual; and
(i) grounds for suspension or termination.

**9. Ratification by Parliament-**

(1) Timber utilization contracts entered into by the Minister on behalf of the President shall be subject to ratification by Parliament.

(2) Parliament may upon the recommendation of the Forestry Commission and upon such conditions as Parliament may prescribed, authorize any other agency of government to approve timber utilization contracts.

**10. Logging Manual-**

There shall be prepared by the Forestry Department in consultation with the Forestry Commission a Logging Manual for the purposes of this Act and regulations made under this Act.

**11. Survey-**

No timber utilization contract shall be entered into under this Act unless the relevant land has been surveyed in accordance with the Survey Act,1962 (Act 127).

**12. Management of timber operation-**

(1) No timber utilization contract shall be entered into with any person under this Act unless the person has the ability to have at all times a manager who shall be a professional forester in charge of the timber operations and related activities.

(2) The holder shall notify the Chief Conservator of Forests in writing of every appointment of a manager and the change of a manager.

**13. Payment of royalties, charges and other fees-**

(1) There shall be paid in respect of timber operations approved under this Act such royalties, annual rent, fees and charges as the Minister on the advice of the Commission may by legislative instrument prescribed.

(2) A holder who fails to pay monies payable under subsection (1) of this section is liable to have his contract terminated.

**14. Payment in respect of stool lands-**

(1) Receipts obtained by virtue of section 13 (1) in respect of timber on stool land shall be disbursed as provided for by law.

(2) Receipt obtained in respect of land other than public stool land shall be dealt with as shall be agreed upon with the owners of the land and the Forestry Department.

**15. Suspension and termination of timber utilization contracts-**

(1) The Minister, acting on the recommendations of the Commission may suspend or terminate, as is appropriate in the circumstances of the case, a timber utilization contract where-

(a) the holder has breached any of the terms or conditions of the contract; or

(b) the holder has lost the ability, financially or otherwise to manage the timber resources efficiently; or

(c) the area of the land subject to the contract or a part of it is under review to determine its suitability for the operations; or

(d) the area of land subject to the contract or a part of it is no longer suitable for the operations under a timber utilization contract; or

(e) a review of operations by the Forestry Department determines that there are enough grounds for termination of the contract; or

(f) the holder is charged with or convicted of an offence under this Act or of a forest offence.

(2) The holder of the contract terminated under section 15 (1), (c), (d) and (e) shall be entitled to replacement.

(3) On the suspension or termination of a timber utilization contract under this section the right of the holder shall cease but without prejudice to any right of action or remedy of the government or any person in respect of any prior breach, non-performance or non-observance of any condition on the part of the holder

(4) A holder of a timber utilization contract whose timber rights have been suspension have redressed, petition the Commission which shall make recommendations to the Minister on the merits or otherwise of removing the suspension.

**16. Transfer of timber rights-**

(1) No rights over or interest in timber granted under a timber utilization contract shall be transferred or assigned without the written consent of the Minister given on the recommendation of the Commission and the consent to assign or transfer shall not be unreasonably withheld or delayed.

(2) An application for such a transfer shall be evaluated by the Evaluation Committee.

(3) A holder who transfers or assigns his timber rights under a timber utilization contract contrary to subsection (1) of this section commits an offence and is liable on summary conviction to a fine of not less than 300% of the annual rent payable.

**17. Offences-**

(1) Any person charged with the management or protection of a resource by virtue of his employment in any institution of government who-

(a) by any act or omission in the performance of his duties facilitates the breach of any provision of this Act; or

(b) condones or connives with any other person in breach of a provision of this Act,

commits an offence and is liable on summary conviction to a term of imprisonment of not less than 6 months and not exceeding two years without the option of a fine.

(2) Any person who-

(a) harvests timber to which this Act applies without a valid timber utilization contract; or

(b) operates or causes to be operated a vehicle to carry, haul evacuate or transport timber harvested in contravention of this Act; or

(c) offers for sale, sells or buys timber harvested in contravention of this Act; or

(d) stocks timber harvested in contravention of this Act; or

(e) carries, hauls or evacuates by non-mechanical means any timber harvested in contravention of this Act,

commits an offence and is liable on summary conviction to imprisonment for a term of not less than 6 months and not exceeding 2 years.

(3) Where a person is convicted under subsection (2) the court shall order the confiscation to the State of any tool, equipment and machinery involved in the commission of the offence; and the court shall order to be confiscated and sold any timber harvested in the commission of the offence; and the court shall order to be confiscated and sold any timber harvested in the commission of the offence.

(4) Notwithstanding the right of the court to sentence a person convicted under subsection (2) of this section to imprisonment, the court may in lieu of sentence of imprisonment impose in respect of the offences specified in-

(a) subsection (2) (a) or (b), a penalty in the sum of 1000% of the market value of the timber involved in the commission of the offence; or

(b) subsection (2) (c) or (d), a penalty in the sum of 500% of the market value of the timber involved in the commission of the offence; or

(c) subsection (2) (e), a penalty in the sum of 100% of the market value of the timber involved in the commission of the offence.

**18. Regulations-**

The Minister on the recommendations of the Forestry Commission may by legislative instrument make regulations-

(a) prescribing procedure for the identification of lands suitable for grand of timber rights;

(b) prescribing the procedure for application, processing and grant of timber rights;

(c) on the terms and conditions for timber rights;

(d) in respect of the Logging Manual to ensure proper harvesting and yield;

(e) prescribing the rate of royalties, fees , management service charges and other charges payable in respect of timber;

(f) criteria for categorizing timber operations in timber scale of operations;

(g) on procedure for salvage and disposal abandoned timber or seized timber produce;

(h) specifying the proportion of timber originating from timber utilization contracts to be made available to the domestic and export market;
(i) on approved hours for timber harvesting and for conveyance of harvested timber;
(j) on registration and operation of chainsaws operators on land to which this Act applies;
(K) prescribing species of trees considered "depleted", "threatened", "endangered", or "economically extinct" and specifying the conditions under which they may be felled;
(l) prescribing conditions for harvesting trees for domestic or social purposes; and
(m) generally for the purpose of giving effect to the provisions of this Act.

**19. Savings and transitional provision-**

(1) Any timber right, concession or lease granted under any enactment and valid immediately before the commencement of this Act shall continue in force for a period not exceeding 6 months from the date of the coming into force of this Act.

(2) With 6 months from the coming into force of this Act, the holder of any such timber right, concession or lease, may apply for a timber utilization contract.

(3) On the application made under subsection (2) the Evaluation Committee shall evaluate the application and shall submit its report and recommendation to the Commission in accordance with this Act and regulations made under it and the contract shall made to take effect after the expiry of 6 months.

(4) The Commission shall on the receipt of the Evaluation Committee's report under subsection (3) recommend the entry of a timber utilization contract with the holder of the timber right, concession or lease to the Minister.

(5) The Minister shall on the basis of the recommendation under subsection (4) enter into a timber utilization contract with the holder of the timber right, concession or lease.

**20. Interpretation-**

In this Act unless the context otherwise requires-

"alienation holding" means any land acquired by a person through an outright sale of the land by the owner;
"annual rent" means the fee levied or paid per hectare per annum to the owner or landlord for the exercise of timber rights on his piece of land as specified in the contract;
"contract" means a timber utilization contract entered into under this Act;
"Commission" means the Forestry Commission established under Act 453;
"Evaluation Committee" means the Timber Rights Evaluation Committee established under section 5 of this Act;
"forest offence" means any offence provided for by law in respect of a forest, timber, trees or forest produce;
"forest produce" included the following-

(a) timber, charcoal, rubber, wood, oil, peat, resin and natural varnish;
(b) trees and leaves, flowers and fruit, and all other parts and produce of trees not herein mentioned;
(c) plants no being trees (including grass, creepers, reeds and moss) and all parts and produce of such plants;
(d) wild animals and skins, tusks, horns, bones, silk, honey, and wax and all parts and produce of wild animals;

"harvest" means to fell, cut, collect or otherwise dispose of timber from land to which this Act applies;

"harvesting plan" means the schedule of planned felling and harvesting operations for an area to which the contract relates prepared by the holder of the contract for a period of 5 years in accordance with the Logging Manual;

"holder" means a person to whom timber rights have been granted under this Act;

"Logging Manual" means a set of rules intended to guide the activities of persons who harvest timber in the forest;

"Minister" means the Minister responsible for Forestry;

"public land" includes any land which immediately before the coming into force of the 1992 Constitution was vested in the Government of Ghana on behalf of, and in trust for the people of Ghana, for the
public service of Ghana and any land acquired in the public interest for the purpose of the Government of Ghana before or after that date;

"timber" includes standing, falling and felled trees, wood for industrial purposes, logs, sawnwood;

"timber rights" means the right to harvest trees and extract timber from a specified area of land under a timber utilization contract;

"timber utilization contract" means a written agreement that specifies the terms of timber rights granted in respect of an area of land for a fixed period of time;

"stool land" includes any land or interest in, or right over any land trolled by a stool or skin, the head of a particular community or group for the benefit of the subjects of that stool, the members of that community or group.

**21. Modification of Cap 136 and 157-**

The Concessions Ordinance, Cap 136 and the Forests Ordinance, Cap 157 shall apply with such modification as may be necessary to give effect to the provisions of this Act.

**22. Repeals-**

(1) The Concessions Act, 1962 (Act124) other than sections 1 and 16 is hereby repealed.

(2) Sections 1 and 16 of Act 124 shall apply with such modifications as may be

necessary to give effect to the provisions of this Act.

(3) Notwithstanding the repeal under subsection (1) of this section any regulations made thereunder and in force at the commencement of this Act shall subject to this Act continue in force until revoked or otherwise dealt with.

(4) The following instruments are hereby revoked-

Timber Leases and Licenses Regulations, 1962 (L.I.229);

Timber Leases and Licenses (Amendment) Regulations, 1963 (L.I.282); and

Timber Leases and Licenses (Amendment) Regulations. 1979 (L.I. 1215).

Date of Gazette notification: 18th March, 1998

# APPENDIX III: TIMBER RESOURCES MANAGEMENT (AMENDMENT) ACT, 2002

## ACT 617

Act 617

THE SIX HUNDRED AND SEVENTEENTH

# ACT

OF THE PARLIAMENT OF THE REPUBLIC

OF GHANA

ENTITLED

## THE TIMBER RESOURCES MANAGEMENT (AMENDMENT) ACT 2002

AN ACT to amend the Timber Resources Management Act 1997 (Act 547) to exclude from its application land with private forest plantation; to provide for the maximum duration, and maximum limit of area, of timber rights; to provide for incentives and benefits applicable to investors in forestry and wildlife and to provide for matters related to these.

DATE OF ASSENT: 8th April, 2002.

BE IT ENACTED by Parliament as follows:

**Section 4 of Act 547 amended**

1. The Timber Resources Management Act 1997 (Act 547) referred to in this act as the "principal enactment" is amended in section 4 as follows:

(a) by the substitution for subsection (2) of the following:

"(2) No timber rights shall be granted in respect of –

(a) land subject to alienation holding; or

(b) land with farms

without the written authorization of the individual, group or owners concerned";

(b) by the insertion after subsection (2) of the following new subsection:

"(3) No timber rights shall be granted in respect of-

(a) land with private forest plantation; or

(b) land with any timber grown or owned by any individual or group of individuals."

**Section 6A and 6B inserted in Act 547**

2. The principal enactment is amended by the insertion after section 6 of the following new section:

**"Duration and area of timber right**

6A. (1) Subject to subsection (4), timber rights shall not be granted for a period exceeding 40 years.

(2) Subject to subsection (4), the size of the area in respect of which timber rights may be granted shall not exceed 125 square kilometers in respect of any particular grant of timber rights at a time.

(3) Subject to subsection (4), a small, medium or large scale timber operator as categorized in Schedule 1 to the Timber Resources Management Regulations 1998 (L.I. 1649), shall not be granted an area that exceeds 200, 300 or 500 square kilometers respectively, and accordingly a holder with the respective maximum holdings does not qualify to be granted further timber rights.

(4) The Minister may on the recommendation of the Commission and with the approval of Parliament by resolution permit grants of timber rights that exceed the limits specified in subsections (1), (2) and (3).

(5) The duration and time limits of timber rights specified in subsections (1), (2) and (3) shall not apply to timber leases granted before the coming into force of the Timber Resources Management Act, 1997 (Act 547) and the Timber Resources Management Regulation, 1998 (L.I. 1649).

**Disqualification for involvement in illegal timber operations**

6B. Where a holder of timber rights who seeks to be granted further timber rights has been convicted of or admits to 2 illegal transactions or operation in the industry, in the 2 years immediately preceding the application, the applicant shall not be granted."

**Insertion of sections 14A to 14J in Act 547**

3. The principal enactment is amended by the insertion after section 14 of the following new section:

**"Benefits and incentives for investors**

14A A person who invests in any forestry or wildlife enterprise (hereafter referred to in this Act as "an investor") is entitled to such benefits and incentives as are applicable to its enterprise under the Internal Revenue Act, 2000 (Act 592) and under Chapters 82, 84, 85 and 98 of the Customs Harmonised Commodity and Tariff Code scheduled to the Customs, Excise and Preventive Service Law, 1993 (P.N.D.C.L. 330) and any other enactment for the time being in force.

**Exemption of non-zero-rated items**

14B. An investor who desires the benefits and incentives provided under section 14A, but whose plant, machinery,

equipment or parts of machinery are non zero-rated under the Customs Harmonised Commodity and Tariff Code scheduled to the Customs, Excise and Preventive Service Law, 1993 (P.N.D.C.L. 330), may submit an application for exemption of import duties, VAT or excise duties on the plant, machinery, equipment or parts thereof to the Commission which shall submit it to the appropriate tax authority with its endorsement or otherwise.

**Incentives for special investment**

14C. For the purpose of promoting strategic or major investments in the forestry and wildlife sector, the Minister may, on the recommendation of the Commission and in consultation with such other state agencies as the Minister may determine, negotiate specific incentives in addition to the incentives provided in section 14A for such period as may be specified in the relevant timber utilization contract.

**Investment guarantees, transfer of capital, profits and dividends**

14D. An investor shall be guaranteed unconditional transferability through any authorised dealer bank in freely convertible currency of

(a) dividends or net profits attributable to the investment;
(b) payments in respect of loan servicing where foreign loan has been obtained;
(c) fees and charges in respect of any technology transfer agreement of which the Commission has been informed; and
(d) the remittance of proceeds, net of all taxes and other obligations, in the event of sale or liquidation of the operations of the investor or any interest attributable to the investment.

**Guarantees against expropriation**

14E. (1) Subject to subsections (2) and (3)

(a) the operations of an investor shall not be nationalized or expropriated by Government; and
(b) no person who owns, whether wholly or in part, the capital of any forestry or wildlife investment shall be compelled by law to cede the interest in the capital to any other person.

(2) There shall not be any acquisition of the operations of an investor by the State unless the acquisition is in the national interest or for a public purpose and under a law which makes provision for:

(a) payment of fair and adequate compensation, and

(b) a right of access to the High Court for the determination of the investor's interest or right and the amount of compensation to which the investor is entitled.

(3) Any compensation payable under this section shall be paid without undue delay and authorization for its repatriation in convertible currency, where applicable, shall be issued.

**Dispute settlement procedures**

14F. (1) Where a dispute arises between an investor and Government all efforts shall be made through mutual discussion to reach an amicable settlement.

(2) Any dispute between an investor and Government which is not amicably settled through mutual discussion may be submitted at the option of the aggrieved party to arbitration as follows:

(a) in accordance with the rules of procedure for arbitration of the United Nations Commission on International Trade Law;

(b) in the case of a foreign investor, within the framework of any bilateral or multilateral agreement on investment protection to which the Government and the country of which the investor is a national are parties; or

(c) in accordance with any other national or international machinery for the settlement of investment dispute agreed to by the parties.

(3) Where in respect of any dispute, there is disagreement between the investor and the Government as to the method of dispute settlement to be adopted, the choice of the investor shall prevail.

**Immigration quota**

14G. (1) An investor with a paid-up capital of US $10,000.00 but less than US $100,000.00 or its equivalent in cedis, is entitled to an initial automatic maximum immigrant quota of one person.

(2) An investor with a paid-up capital of US 100,000.00 but less than US $500,000.00 or its equivalent in cedis is entitled to an initial automatic maximum immigrant quota of two persons.

(3) An investor with a paid-up capital of US $500,000.00 or more or its equivalent in cedis is entitled to an initial automatic maximum immigrant quota of four persons.

(4) Except as provided in subsections (1), (2) and (3), any application for immigrant quota by an investor shall be submitted to the Commission.

(5) An application submitted under this section shall be submitted by the Commission to the Immigration Service which shall deal with it in consultation with the Commission.

**Assistance to an investor**

14H. The Commission shall provide an investor such assistance and guidance as the investor may require and shall act as liaison between the investor and relevant government departments, agencies and other public authorities.

**Personal remittances**

14I. There shall be provided to expatriate personnel employed or engaged in an investment in forestry or wildlife, banking facilities through authorised dealer banks for making remittances abroad except that the remittances shall not exceed the total official wage of the expatriate personnel.

**Technology transfer agreement**

14J. (1) An investor may enter into such technology transfer agreement as the investor considers appropriate for its operation.

(2) A technology transfer agreement entered into under subsection (1) shall be registered with the Commission.

(3) A technology transfer agreement shall be governed by any Regulations for the time being in force relating to such agreements."

**Section 17 of Act 547 amended**

4. The principal enactment is amended in section 17(2) as follows:

(a) in paragraph (b), by the repeal of "or causes to be operated"; and

(b) by the insertion of "or" after paragraph (e) and inserting a new paragraph as follows:

"(f) is the owner of a vehicle or not being the owner causes to be operated a vehicle to carry, haul, evacuate or transport timber harvested in contravention of this Act;"

**Section 18 of Act 547 amended**

5. The principal enactment is amended by the renumbering of section 18 as "18(1)" and the insertions of a new subsection (2) as follows

"(2) An instrument made under subsection (1) may provide for breach of any provision therein, a penalty of not less than 250 penalty units and not exceeding 2 years or both; and for a fine of not less than 1000 penalty units for a second and any subsequent offence under the instrument."

**Section 20 of Act 547 amended**

6. The principal enactment is amended in section 20 by renumbering the section as "20(1)" and the insertion of a new subsection (2) as follows:

"(2) The expression "timber utilization contract" shall apply with such modification as may be necessary, to a certificate of purchase, a permit or any other authorization for timber rights approved by the Minister on the recommendation of the Commission."

**Consequential amendment**

7. The Forestry Commission Act 1999 (Act 571) is amended by the insertion after section 2(2) of the following subsection:

"(3) An application to invest in a project that involves forest or wildlife shall be submitted to the Commission for assessment and recommendations to the Minister."

Date of Gazette notification: 12th April, 2002

# APPENDIX V: CONTROL OF BUSH FIRES LAW OF 1983
(P.N.D.C.L. 46)

P.N.D.C.L. 46.

# CONTROL OF BUSH FIRES LAW, 1983

IN Pursuance of the Provisional National Defence Council (Establishment) Proclamation, 1981 this Law is hereby made:

1. Except as otherwise provided in section 2 of this Law it shall be unlawful for any person to start a bush fire for any purpose whatsoever.

2. (1) It shall be lawful for any person to set fire for the purpose of burning farm slash or any grass, herbage or wood trees on a farm if the fire is controlled and confined within the boundaries of the farm and does not exceed the purpose for which the fire is permitted.

(2) It shall be lawful for any person authorised by the Chief Conservator of Forests or the Chief Game and Wildlife Officer to set fire to a conservation area or a specified area for the purpose of the management of such area if the fire is controlled and confined within the boundaries of such area.

3. (1) Any person who starts a bush fire or who does any act in contravention of section 2 of this Law shall be responsible for all the consequences of that fire and for making good the cost of any unlawful damage caused thereby.

(2) Without prejudice to subsection (1) of this section it shall be the duty of any person who starts a bush fire to control the spread of the fire.

4. (1) Any person who contravenes or fails to comply with any provision of this Law shall be guilty of an offence and liable on summary conviction to a fine not exceeding ¢10,000.00 or to imprisonment not exceeding five years or to both.

(2) In addition to any penalty imposed under subsection (1) of this section the Court may order the offender to make good the cost of any unlawful damage caused by the fire.

5. The Secretary responsible for Lands and Natural Resources may by legislative instrument make such regulations as may be necessary to give effect to the provision of this Law.

6. (1) In this Law-

"conservation area" means any Government protected natural resource area under the administration of the Forestry Department or the Department of Game and Wildlife;

"specified area" means an area specified in a permit issued by the Department of Game and Wildlife or the Forestry Department in which burning may be necessary for habitat management purposes.

(2) For the purposes of this Law a person starts a bush fire if any action of his results in the uncontrolled burning of vegetation or of any farm, forest or wildlife reserve or human habitation or electricity pylon or telephone pole.

7. (1) Section 7 of the Wild Animals Preservation Act, 1961 (Act 43) and section 1 (1)(c) and (d) of the Forest Protection Decree, 1974 (N.R.C.D. 243) are hereby repealed.

(2) In regulation 4 (2) of the Wild Animals Preservation (Game Reserve) Regulations, 1967 (L.I. 171) the word "or maliciously sets fire to" are hereby revoked.

Made this 10th day of May, 1983.

Flt.-Lt. Jerry John Rawlings

*Chairman of the Provisional National Defence Council*

Date of *Gazette* notification: 20th May, 1983

# APPENDIX V: CONTROL AND PREVENTION OF BUSHFIRES LAW OF 1990

(P.N.D.C.L. 229)

**P.N.D.C.L 229**

## CONTROL AND PREVENTION OF BUSHFIRES LAW, 1990

In pursuance of the Provisional National Defence Council (Establishment) Proclamation, 1981 this Law is hereby made:

1. Except as otherwise provided under this Law it is unlawful for any person to start a bushfires for any purpose whatsoever.

2. For the purpose of this Law, a person starts a bushfire if any action of his results in the uncontrolled burning of any farm, forest or grassland.

3. The Chief Conservator of Forests or the Chief Game and Wildlife Officer may authorise his staff to set fire within an established forest or wildlife conservation area for the purpose of –
(a) the management of such area; or
(b) the protection of such area against accidental fire.

4. (1) Any person authorised by the Director of agricultural Extension Services of the Director of Animal Health Production Department may set fire to a specified area other than a conservation areas for the purpose of range management or other agricultural purpose.

(2) Any fire set by virtue of subsection (1) of this section shall be controlled and confined to the specified area and shall NOT exceed the purpose for which the fire is permitted.

5. (1) There shall be established in each District Assembly within three months of the coming into force of this Law, a Bushfire Control Sub-Committee of the Executive Committee of the Assembly (hereafter referred to as the "Sub-Committee").

(2) The Sub-Committee shall consist of such members of the District Assembly as shall be determined by the Assembly.

(3) The Sub-Committee may co-opt any person and in particular
(a) the District Fire Officer;
(b) the District Forestry Officer (or the officer in charge of the Forest District within the area of authority of the District Assembly);
(c) the Officer in charge of any wildlife office or conservation area in the District; or
(d) a senior Officer of the agricultural Extension Service in the District: or
(e) a Senior Officer of the Department of Animal Health and Production in the District, to advise on the performance of its functions under this Law.

(4) The Sub-Committee shall regulate its own procedure.

6. (1) The Sub-Committee shall –
(a) draw up for the consideration of the District Assembly such Bye-laws as may be appropriate to ensure adequate prevention, control and monitoring of bushfires;
(b) specify the period or periods in the year, and thereafter yearly, within which the burning of farm slash, grass, herbage and dead wood shall be prohibited;

**CONTROL AND PREVENTION OF BUSHFIRES LAW, 1990**

(c) draw up, where appropriate, a District early burning programme and ensure that it is implemented under proper control and supervision;
(d) Set up town, area and unit Bushfire Control committees which shall direct the activities of the town, area or Unit Fire Volunteer squads;
(e) educate residents of the District on the hazards of uncontrolled fires;
(f) compile data on all bushfire outbreaks and offences within the District and submit these with quarterly reports to the following:

(i) the District Assembly;
(ii) the Chief Fire Officer;
(iii) the Chief Conservator of Forests;
(iv) the Chief Game and Wildlife Officer; and
(v) the Environmental Protection Council.
(vi) Forestry Commission

(2) The Sub-Committee shall, in proposing any bye-laws under the section take into consideration the ecological characteristics of the District.

7. There shall be established in every town, area or unit a Fire Volunteer Squad.

8. Any person who starts a fire permitted by this Law shall control the spread of the fire.

9. (1) Any organization responsible for the clearing and weeding of any roadside shall ensure that the roadside is kept free of all bushfire hazards.

(2) Where any damage is caused by a fire set by an employee of the organization, such organization shall be held responsible for the damage.

10. The National Fire Service shall on the coming into force of this Law be responsible for the training of Town, Area and Unit Fire Volunteer Squads.

11. (1) Any person who contravenes or fails to employ with any provision of this Law commits a conviction before a Public Tribunal or Court to a fine of not less than ¢20,000.00 or more than ¢100,000.00 or to imprisonment or community labour not exceeding twelve months or to both such fine or imprisonment or community labour and for a subsequent offence to imprisonment or community labour not exceeding two years.

(2) Where a person is convicted of an offence under subsection (1) of this section, the Public Tribunal or Court may in addition to any penalty that it may impose, order the offender to make good the value of any property including any crops or trees damaged or destroyed by the fire caused by him.

12. (1) Any person who –
(a) fails to report a person known to him to have started or caused a bushfire, to a person or body specified in sub-paragraphs (i) to (v) of paragraph (b) of this subsection; or
(b) being aware of the occurrence of bush fire, without good cause, fails to report the occurrence to –
(i) a member of the town, area or unit Fire Volunteer Squad;

**P.N.D.C.L 229**

**CONTROL AND PREVENTION OF BUSHFIRES LAW, 1990**

(ii) a member of the bush fire control Sub-Committee;
(iii) a policy officer;
(iv) the traditional authority;
(v) the Committee for the Defence of the Revolution in the area of the bush fire commits an offence.

(2) Any person found guilty under subsection (1) of this section liable on conviction to a fine not exceeding ¢10,000.00 or to imprisonment or community labour for a term not exceeding one month or both.

13. The secretary may by legislative instrument make regulations as may be necessary to give full effect to the provision of this Law.

14. In this Law unless the context otherwise requires – "Conservation area" means any area protected by law and administered to conserve natural resources, by the Forestry Department, Department of Game and Wildlife or by a District Assembly with the technical assistance of these Departments; "District Assembly" includes a Metropolitan Assembly; "range management" means control and manipulation of vegetation for optimum usage by human beings, livestock or wild animals; "Secretary" means the Provisional National Defence Council Secretary responsible for Local Government; "specified area" means an area specified in a permit issued by the Forestry Department, Department of game and Wildlife, Agriculture extension Service or Department of Animal Health and Production in which burning is necessary for range management of fire protection."

15. The Control of Bush Fires Law, 1983 (P.N.D.C.L. 46) is hereby repealed.

**Made this 1st day of March, 1990.**

FLT. LT. JERRY JOHN RAWLINGS
Chairman of the Provisional National Defence Council

Date of Gazette notification: 20th April, 1990.

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# APPENDIX VI: NATIONAL LAND POLICY

# NATIONAL LAND POLICY

MINISTRY OF LANDS AND FORESTRY

ACCRA JUNE 1999

# FOREWORD

This is the first time in the history of this country that a comprehensive land policy has been formulated. Hitherto, land has been managed through various legal instruments and customary practices applied through the court system. Even though an approach to land management was not wrong in itself, it did not provide an overall direction for policy development and therefore did not provide a basis for evaluation and change where necessary.

For instance, the Land Appropriation Ordinance of 1901, the Kumasi Lands Ordinance, 1943 (Cap 145), the Land and Native Rights Ordinance, 1927 (Cap 143), the Akim Abuakwa (Stool Revenue) Act (No. 28), 1958, the Stool Lands Act, 1960 (Act 27) and the Public Lands Ordinance, 1876 (Cap 134) were some of the statutes that were enacted to deal with specific land related problems at particular times. These laws eventually, served as the guide to the current land management practices existing in the country. Land management and administration has therefore been on *ad hoc* basis. Effective and efficient management of lands in the country has therefore not been achieved. The Numerous land litigation cases in the Courts attests to this fact.

Initial attempt to prepare a Land Policy document dates back to 1973, when the Law Reform Commission submitted its Interim Report on the Reform of Land Law in Ghana. The Final Report of the commission was submitted to the Government in 1994.

Indeed the Final Report highlighted major issues, the key among which were the inadequacies and inequities of the existing land laws especially against the backdrop of the provisions of the 1992 Constitution, and the absence of a policy framework.

Subsequently, the Ministry of Lands and Forestry commissioned various experts and committees to study and make recommendations on the report of the Law Reform Commission and other relevant research data. In order to address the key issues and the reforms recommended, it was decided that a Policy framework should be formulated on the basis of comprehensive principles that offer direction for efficient management and use of land.

A final National Land Policy therefore, would have to provide the foundation for the review of existing laws and enacting new ones to advance rapidly the socio-economic development programmes and plans of government, in general, and

specifically, to facilitate the achievement of the objectives set out in the national development policy framework, Ghana-Vision 2020.

The policy formulation process which was initiated in 1994 culminated in a National Workshop in April 1997. The outcome of Workshop is this premier national land policy document which was approved by Government on 21st January 1999 for implementation.

The policy seeks to address some of the fundamental problems associated with land management in the country. These include general indiscipline in the land market characterised by land encroachments, multiple land sales, use of unapproved development schemes, haphazard development, indeterminate boundaries of customary-owned lands resulting from lack of reliable maps and plans, compulsory acquisition by government of large tracts of land which have not been utilized; a weak land administration system; and conflicting land uses such as the activities of mining companies which leave large tracts of land denuded as against farming which is the mainstay of the rural economy; and the time consuming land litigation which have crowded out other cases in our courts.

Whilst the policies enshrined in this document do not provide an all round panacea for all our land problems, they provide the framework and direction for dealing with the issues of land ownership, security of tenure, land use and development, and environmental conservation on a sustained basis. One key element of the policy thrust is the involvement of the local community, opinion leaders, traditional authorities as well as government agencies in the land development process. It provides for a decision making framework that takes on board all identifiable stakeholders.

In line with the principle of participatory democracy, provision has been made in the document for periodic review and adjustment of the document and legislation to reflect emerging realities in land administration and challenges in the country.

It is our cherished hope that this Policy Document will serve as a useful guide for the smooth administration of land to facilitate the socio-economic development of our beloved country.

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*Minister for Lands and Forestry*

Accra

June, 1999.

# LAND POLICY

## 1.0 Preamble

Ghana's territory of land and inland water areas cover a total of 238.539 square kilometres. Additionally, the country's territorial waters extend 12 nautical miles and the exclusive economic zone extends 200 nautical miles, both from the low water mark. The nature, scope and totality of the natural resources inherent in Ghana's territorial domain constitute the nation's socio-economic backbone, the basis of its wealth, the realm of its physical and political strength and the source of its sustainable livelihood and very survival.

Ghana recognizes that the social, cultural and economic activities of its estimates 18 million people are closely linked to these limited but highly valued natural resources. This linkage is reflected in such forms of land use as agriculture, forestry, manufacturing industry, extractive industry including mining, human settlement, military and defence applications, transportation networks and various other infrastructural provisions.

In order to enhance the conservation of environmental quality, preserve options for the present and future generations and secure human sustenance, there is the urgent need today more than more than ever before to ensure the wise use of land based on sound principles of resource management through striking a meaningful balance among the competing demands of the very economic activities which support human livelihood, and survival. Central to this policy, therefore, is the application of these principles to the sound management and utilisation of the country's land and water resources.

The policy document is in two parts: the first part deals with the background to the policy and the policy guidelines whilst the second part deals with the policy actions.

## 2.0 Background

### *2.0 Basis of Land Administration and Land Delivery System in Ghana*

Land administration in Ghana is governed by both customary practices and enacted legislation. There are basically two types of land ownership: public or state lands and private lands. Public or State lands are defined as lands compulsorily acquired by the government through the invocation of the appropriate legislation, vested in the President and held in trust by the State for the entire people of Ghana. In contrast, private lands in most parts of the country, are in communal ownership held in trust for the community or group by a stool or skin as symbol of traditional authority or by a family. Stool or skin lands are a feature of land ownership in almost all the Akan traditional groups in southern Ghana and in most traditional groups in northern Ghana. Sandwiched between the public and private lands are vested lands, which are a form of split ownership between the state and the traditional owners.

However, scattered all over Ghana are a number of traditional groups which do not recognize a stool or skin as symbolizing private communal land ownership. In such instances, the traditional arrangement is normally that of vesting land ownership in the clan, family or individual. This practice is prevalent in the Volta Region and in some traditional areas in the Central, Eastern, Greater Accra, Northern, Upper East and Upper West Region of Ghana.

Fundamentally, land ownership is based on absolute "allodial" or permanent title from which all other lesser titles to, interests in or rights over land derive. Normally, the "allodial" title is vested in a stool, skin, clan, family and in some cases individuals. The traditional arrangement for making land available and accessible for land uses in Ghana consists largely of the exercise of rights under "alodial" title.

Guided by the existing customary practices, the state had accordingly fashioned a formal administrative framework consisting of a number of land sector agencies, mainly under the Ministry of Lands and Forestry, to facilitate a rational and relatively orderly system of land administration. Enabled by enacted legislation, these agencies variously perform the following functions–

*administration of public lands.
*administration of vested lands.
*administration of stool lands.
*administration of stool land boundary disputes.
*collection and disbursement of stool land revenue.
*determination of land and other property values for various purposes where government had an interest (rental, purchases, etc.), rateable values, and compensation for public land acquisitions.
*undertaking of national land surveys and mapping, licensing of land surveyors and verification of survey plans.
*registration of titles and protection of interests in land throughout Ghana.
*formation of land development standards, co-ordination of land development activities and approval of settlement development plans.

### *2.2 Problems and Constraints of the Land Sector*

Despite the administrative machinery on the ground to perform the above functions, the land sector has continued to be beset by major problems and constraints involving—

*(a) general indiscipline in the land market* characterized by the current spate of land encroachments, multiple ales of residential parcels, unapproved development schemes, haphazard development, etc. leading to environmental problems, disputes, conflicts and endless litigation.
*(b) indeterminate boundaries of stool/skin lands* resulting directly from the lack of reliable maps/plans, and the use of unapproved, old or inaccurate maps, leading to land conflicts and litigation between stools, skins and other land owning groups.
*(c) compulsory acquisition by government of large tracts of lands* which have not been utilized and for which payment of compensation has been delayed. By this policy, landowners have been left almost landless, denied their source of

livelihood and have become tenants on their own lands, giving rise to poverty and disputes between the state and the stools, as well as within the private land sector.

*(d) inadequate security of land tenure* due to conflicts of interests between and within land owning groups and the state, land racketeering, slow disposal o land cases by the courts and a weak land administration system.

(e) difficult accessibility to land for agricultural, industrial, commercial and residential development purposes due to conflicting claims to ownership, and varied outmoded land disposal procedures.

*(f) weak land administration system* characterized by lack of comprehensive land policy framework, reliance on inadequate and out-dated legislation, lack of adequate functional and co-ordinated geographic information systems and networks as well as of transparent guidelines; poor capacity and capability to initiate and co-ordinate policy actions let alone resolve contradictory policies and policy actions among various land delivery agencies.

*(g) lack of consultation with land owners and chiefs* in decision-making for land allocation, acquisition, management, utilisation and development has generated intractable disputes between the state and the private land owning groups and within communities.

*(h) lack of consultation, coordination and cooperation* among development agencies.

*(i) inadequate coordination with neighbouring countries* in the management of Ghana's international borders which normally reflects in cross-border activities such as farming, human settlements, smuggling, cattle grazing, etc., and inadequate management of shared water bodies within the West African sub-region.

**3.0 The Policy Framework**

This policy provides the framework for addressing these problems and constraints to ensure equity in land allocation and holding and to maintain a stable environment for the country's sustainable social and economic development.

**3.1 Guiding Priniciples**

Deriving from both national convictions and international guidelines, agreements and conventions, the principles that guide Ghana's land policy are as follows—

*the principle that Ghana's international boundaries will be protected and secured in accordance with international conventions as enshrined in the International Law of the Sea, Anglo-Francophone Protocols in respect of all these boundaries as well as decisions of the Ghana-Togo Joint Border Commission and the Ghana-Burkina Faso Border Commission;

*shared water bodies between Ghana and her neighbouring countries are the common resources of all countries concerned and should be managed in accordance with international conventions for the mutual benefits of all stakeholder countries;

*cross-border activities by farmers, cattle herdsmen and rustlers, smugglers, etc., should be handled with neighbouring countries such that the welfare of the people, territorial integrity and the security of Ghana are preserved;

*the principle of land as a common national or communal, property resource held in trust for the people and which must be used in the long term interest of the people of Ghana;
*the principle of optimum usage for all types of land uses including human settlements, industry and commerce, agriculture, forestry and mining, the protection of water bodies and the environment in the long term national interest;
*the principle of government facilitation equitable and reasonable access to land within the context of national land use planning;
*the principle of fair access to land and security of tenure
* the principle that whoever takes land for mining and timber operations should restore same to the state it was before the operation. In effect the principle that the "Polluter Pays" it applies to land, water resources and the environment, i.e. all efforts are made to prevent as much as possible the destruction of the environment and that where this is not possible then the agency or organization causing the pollution should ameliorate same:
*The principle of private sector as an engine of growth and development subject to national land use guidelines;
*continued political support at the highest levels, as well as provisions of strong incentives to encourage responsible land-use and respect for regulations, thus offsetting real and perceived costs imposed by loss of access or restriction on use;
*land development fees and taxes should reflect the prevailing economic market values;
*the principle of community participation in land management and land development at all levels which is vital for sustainable urban and rural land development;
*the principle of promoting land information technology.

**3.2 *Aim of Policy***

The land Policy of Ghana aims at the judicious use of the nation's land and all its natural resources by all sections of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable resource management principles and maintaining viable ecosystems.

**3.3 *Objectives of Policy***

In specific terms, the objectives of this policy are to–
*Ensure that Ghana's international boundaries are maintained at all times and cross border activities are managed jointly.
*Ensure that shared water bodies are utilized to the mutual benefit of all stakeholder countries.
*Ensure that every socio-economic activity is consistent with sound land use through sustainable land use planning in the long-term national interest.
*Facilitate equitable access to security of tenure of land based on registered land.
*Protect the rights of landowners and their descendants from becoming landless or tenants on their own lands.

* Ensure the payment, within reasonable time, of fair and adequate compensation for land acquired by government from stool, skin or traditional council, clan, family and individuals.
*Instill order and discipline into the land market to curb the incidence of land encroachment, unapproved development schemes, multiple or illegal land sales, land speculation and other forms of land racketeering.
*Minimise and eliminate where possible, the sources of protracted land boundary disputes, conflicts and litigations in order to bring their associated economic costs and socio-political upheavals under control.
*Create and maintain effective institutional capacity and capability at the national, regional, district and, where appropriate community levels for land service delivery.
*Promote community participation and public awareness at all levels in sustainable land management and development practices to ensure the highest and best use of the land and thereby guarantee optimum returns on land.
*Promote research into all aspects of land ownership, tenure and he operations of the land market and the land development process.
*Ensure continuous education of the general public on land matters

**4.0 Policy Guidelines**

Derived from the Policy Objectives are the following policy statements intended to guide policy action and execution-

***4.1 Securing Ghana's International Boundaries and Shared Water Resources***

(a) Ghana's international boundaries will be secured and managed by the Ghana-Togo Joint Border Commission and Ghana-Burkina Faso Joint Border Commission and Ghana-La Cote d'Ivoire Joint Border Commission.
(b) Shared water bodies between Ghana and her neighbouring countries will be managed by joint commissions for the mutual benefit of all stakeholder countries.
(c) Cross border activities such as farming, human settlements and cattle grazing will be managed so as not to have nay negative effects on the local economy.
(d) Smuggling and rustling across Ghana's international borders are prohibited at all times.

***4.2 Facilitating Equitable Access to land***

(a) An individual can have access to land in any part of Ghana provided that:
*land is available for disposal in the part of Ghana where he seeks to have access to the land
*he agrees with the land owner to adhere to the covenants and other customary practices governing the disposal of the land
*he undertakes to put the land to a use which conforms to the land use plans for the area and to the principles of sound land use and management.
(b) There can be no valid transaction in private lands between or among private entities if-
*there is a conflict of interest within, between or among any category of private landowners or stakeholders;

*the area has been declared a protected area or no planning scheme which conforms to the provisions in Article 267 Section (3) and (8) of the 1992 Constitution has been approved for the area where the transaction is to take place

(c) District assemblies in conjunction with land owners and the Lands Commission should prepare planning schemes for all land uses to facilitate dispositions of land for development.

(d) Open market or negotiated land values will determine prices for private land transactions, including any land transactions made in accordance with customary practice or common law.

(e) Compensation to be paid for lands acquired through compulsory government acquisition will be fair and adequate and will be determined among other things, through negotiations that take into consideration government's investment in the area.

(f) District assemblies may negotiate for land for development purposes at concessionary prices or as a gift but all such grants should be properly documented and processed.

(g) Registered agents and developers will have to abide by transparent land market guidelines as a measure of protection of their clients from the risks of fleeing and speculative behaviours.

***4.3 Security of Tenure and Protection of Land Rights***

(a) All traditional sources of land tenure and rights as well as those derived from common law, that is,

* the allodial owner.
*customary law freeholder.
*an estate of freehold vested in possession or an estate or interest less than freehold under common law.
*leasehold interest.
*interest in land by virtue of any right contractual or share cropping, or other customary tenancy arrangement.

are recognized as legitimate sources of land titles and are to be classified as such.

(b) Decision-making with respect to disposal of land should take into consideration-

*natural resources of the land;
*conservation of land for the future generation;
*protection of land rights of the present generation;
*accountability to subjects for whom the land is held in trust, in accordance with the provisions of the Administration of Lands Act, 1962 (Act 123) and the Head of Family Accountability Law, 19875 (P.N.D.C.L. 112);

(c) No interest in or right over any land belonging to an individual, family or clan can be disposed of or declared stool, skin or traditional council land without consultation with the owner or occupier of the land.

(d) No interest in or right over any land belonging to an individual, family, clan, stool or skin can be compulsorily acquired without payment, in reasonable time, of fair and adequate compensation.

(e) No ownership of stool, skin, clan or family land can pass to any individual, nucleated family or descendants of that individual who by customary practice holds that land in trust for a stool, skin, clan or family other than what an other member of the land holding community is entitled to, and in accordance with the customary practices and usages of the particular community and guidelines of the appropriate House of Chiefs or traditional council.
(f) The primacy of a land title derived from customary or common law sources takes precedence over any other interests in the event that land acquired compulsorily by the government is not utilized for the purpose for which it was acquired or used in the public interest.
(g) The best evidence of title to land, in any area declared as a land title registration district is the Land Title Certificate issued in accordance with the provisions of the Land Title Registration Law, 1986 (P.N.D.C.L. 152). In areas not declared land title registration districts, instruments registered under the Land Registry Act, 1962 (Act 122) should be sufficient proof of title.
(h) As much as possible land disposal or acquisition of any kind for all types of land uses should not render a land title holder, his kith and kin and descendants completely landless or tenants on the land to which they originally had legitimate title save in the case of compulsory acquisition in the public interest.
(i) Any tenant of land anywhere in Ghana is obliged to respect the customary or common law covenants governing the tenancy of land of which he is a tenant.
(j) Where land has been allocated to a government or public organisation neither that organisation nor Lands Commission can alienate that land or pat of it to a third party in the public interest without consultation with the Sector Ministry.
(k) Buildings, structures or sub-structures on lands to which the developer or owner had not title or development/building permit may be demolished at the cost of the developer.

### *4.4 Ensuring Sustainable Land Use*

(a) The use of any land in Ghana for sustainable development, the protection of water bodies and the environment and any other socio-economic activity will be determined through national land use planning guidelines based on sustainable principles in the long term national interest.
(b) All lands declared as forest reserves, strict nature reserves, national parks, wildlife sanctuaries and similar land categories constitute Ghana's permanent forest and wildlife estates and are "fully protected" for ecosystem maintenance, biodiversity conservation and sustainable timber production.
(c) Fully protected land areas as well as timber and wildlife protected areas may be used for the purposes of education, research, recreation and tourism provided that such uses are compatible with the conservation of the environment.
(d) Land categories outside Ghana's permanent forest and wildlife estates are available for such uses as agriculture, timber, mining and other extractive industries, and human settlement within the context of a national land use plan.
(e) No timber production activities shall be carried out on hill and mountain slopes of at least 30 degree gradient. Social and economic activities such as agriculture, mining, human settlement and other similar activities may be carried out on hill and mountain slopes provided appropriate technology is employed in

each circumstance to mitigate any adverse environmental and ecological consequences. With respect to water bodies a minimum of 100 metres off the high water mark should be declared as protected areas.

(f) Inland and coastal wetlands are environmental conservation areas and the following uses considered incompatible with their ecosystem maintenance and natural productivity are strictly prohibited:

*physical draining of wetland waters:
*damming of streams and water courses feeding the wetlands:
* human settlements and their related infrastructural development in wetlands:
*disposal of solid waste and effluents in wetlands:
*mining in wetlands.

(g) Uses of wetlands for farming, grazing, fishing, timber production and salt-wining will be encouraged provided that such uses tend to conserve the ecosystem, biodiversity and sustainable productivity of wetlands.

(h) In general, land use involving mining, other extractive industries, mechanized agriculture, cattle ranching, dairy farming and manufacturing industry will have to conform to prescribed environmental conservation principles and guidelines.

(i) Unless approved by the appropriate public authority, no land use change of any kind will be countenanced.

(j) Land development planning for the purposes of human settlement, industry, large-scale intensive agriculture or their expansion will have to make adequate provisions, among others, for:

*population density, growth and distribution pattern;
*settlement location and pattern preference;
*direction for spatial growth
*physical and social infrastructural development or expansion;
*land and other environmental conservation requirements;
*provision for persons displaced by such development.

(k) Each rural or urban settlement should make adequate spatial provision for the creation, development and protection of a greenbelt

(l) For all construction projects in urban areas, due care should be taken to ensure the provision and maintenance of adequate tree cover to protect the environment.

(m) All land and water resources development activities must conform to the environmental laws in the country and where Environmental Impact Assessment report is required this must be provided. Environmental protection within the polluter pays principle will be enforced.

(n) Provided that payment of adequate compensation in reasonable time will be made, government may acquire land wherever and whenever appropriate to, among other things;

*secure and control areas of urban expansion;
*facilitate urban renewal and redevelopment programmes;
*implement any rural or urban improvement programme;
*provide social infrastructure;
*supply promptly serviced or unserviced lands at prices which can secure, socially and economically acceptable patterns of economic development;

*provide for the purposes of national defence, national security, national health and conflict-resolution;
*protect areas of historical, cultural or ecological interest.

(o) When necessary, Government may intermediate in facilitating investors' access to land owned by stools, skin, clans, families or individuals.
(p) Conflicts with respect to land use will have to be resolved at local, district, regional or national level before any economic land use activity commences.
(q) Stewardship ethos and collaborative action among land owners, stakeholders, private sector developers, non-governmental organizations, the general public and the government authorities will be adopted.
(r) Land with the potential for a wide range of uses should be kept in flexible use forms so that future options for other potential uses are not denied for an unduly long time or permanently lost.

***4.5 Enhancing Land Capability and Land Conservation***

(a) To ensure the conservation of environmental quality no land with a primary forest cover will be cleared for the purpose of establishing a forest or tree crop plantation or mining activity.
(b) No planted tree plantation shall be cleared for the purpose of establishing a mining activity.
(c) The supply of and increase in usable land will be sustained by all appropriate methods, including soil conservation, improving soil productivity, control of desertification, rehabilitation of degraded land areas, land reclamation and the use of land capability analysis.
(d) The explicit condition for mineral extraction- whether surface or underground- is the reclamation and restoration of both the ecology, landscape and land productivity.
(e) Land users and the public should be well informed of the need and the means of improving soil productivity and conservation. Encouragement and other forms of incentives will therefore be provided for any person or group of persons whose land use methods or practices ten to sustain land capability or conserve land for future uses.
(f) Under certain circumstances, and in consultation with custodians, shrines, sacred groves and other categories of land use derived from or determined by customary practices will be treated as having protected status after their boundaries have been demarcated.
(g) Custodians or owners of land may specify uses for their land in consultation with relevant land use authorities and abide by the applicable land use prescriptions and guidelines.
(h) Any land with potential for ecosystem maintenance, biodiversity conservation, or scenic beauty preservation may be declared a protected area by the government through consultation and negotiation with the land owners and subject to the payment of annual rent as compensation. Management of such areas shall be by the collaborative effort of government and the community.

**5.0 Policy Actions**

In pursuing the stated policy objectives, the following actions will be implemented by Government in the short, medium and long-term within the policy framework.

***5.1 Securing Ghana's International Boundaries and shared water resources***

(a) Reactivate the Ghana-Togo Joint Boarder Commission, Ghana-Burkina Faso Joint Border Commission and Ghana-La Cote d'Ivoire Joint Border Commission and provide adequate resources for their operations in order to secure Ghana's international boundaries.

(b) Establish joint technical committees under the Joint Border Commissions with Ghana's neighbours to manage the international rivers flowing through these countries such as the Oti River, Black Volta, White Volta and the Bia Rivers.

(c) Initiatives in resolving issues, problems and disputes arising from the cross border activities such as farming, human settlements and cattle grazing will lie with the traditional authorities and district assemblies under the supervision of the Regional Co-ordinating Council and the Joint Border Commission.

***5.2 Facilitating Equitable Access to Land***

(a) Review the phenomena of landlessness and migrant farmers and take steps to eliminate or at least minimize conditions contributory to migration and encroachment.

(b) Collaborate with the traditional authorities and other land stakeholders to review, harmonies and streamline customary practices, usages and legislations to govern land holding, land acquisition, land use and land disposal.

(c) Encourage, through appropriate incentives, stools/skins, clans and land owning families to create land banks for present and future generations.

(d) Initiate the use of negotiable land bonds as an option for financing timely government acquisitions

(e) Pursue enactment of legislation to impose appropriate levies, penalties and or taxes on allocated but undeveloped lands in order to reduce land speculation and fleeing and ensure equity in capital gains, death duties, etc... with regard to landed property.

(f) Establish standards and registration requirements for real estate dealers and land developers.

(g) Establish basic standards by which land delivery agencies must respond to requests form the public within a reasonable time.

(h) Remove pricing subsidies on government land.

(i) Collaborate with and support the traditional authorities and other land stakeholders to:

*facilitate development of land management knowledge and skills among stool, skin, clan and family landowners:

*institute an administrative mechanism to guide the allocation and disposal of land by traditional authorities and family land owners throughout the country;

*develop systems that would facilitate proper record keeping in respect of allocation and disposal of stool/skin, clan and family lands by all traditional authorities and other land stakeholders;
*assist the various traditional authorities and other land owning families and clans to establish land secretariats to facilitate the work of government departments and agencies involved in land service delivery.

***5.3 Security of Tenure and Protection of Land Rights***

(a) With full participation of traditional and customary land owners undertake tenurial reform process which documents and recognizes the registration and classification of titles under:
*the allodial owner;
*customary law freeholder;
*an estate of freehold vested in possession or an estate or interest less than freehold under common law;
*leasehold interest;
*interest in land by virtue of any right contractual or share cropping or other customary tenancy arrangement.
(b) Speed up title registration to cover all interests in land throughout Ghana and, phase out deeds registration.
(c) Pursue the following actions to resolve or minimize land tenurial disputes and their associated ethnic conflicts:
*implementation of a programme for the production of large scale maps of land parcels and buildings in all urban areas and location where disputes are prevalent;
*enactment of legislation to require stool, skin, clan, family and other land owners to survey and demarcate their land boundaries with the approval of the Survey Department;
*establishment of an Early Warning Mechanism to detect potential areas of land disputes for the purpose of taking preventive measures;
***The Chief Justice shall create a special division of the High Court properly equipped to deal solely with land cases.**

***5.4 Ensuring Planned Land Use***

(a) The Ministry of Lands and Forestry in conjunction with other relevant MDAs shall develop and implement a comprehensive District, Regional and National Land Use Plan and Atlas which zones sections of the country to broad land uses according to criteria agreed among various public and private stakeholders.
(b) The Survey Department should be adequately supported to prepare maps to cover local and regional land uses.
(c) Ensure that all lands for settlement, industrial and commercial development are planned and services before disposal of any kind.
(d) Collate land use specifications and projections from major user interests to prepare revised land use maps of the country and develop and circulate the relevant guidelines.
(e) Ensure that land sector institutions develop, coordinate and effectively implement management plans or programmes based on categories over which

they have administrative responsibility.
(f) Facilitate an inter-ministerial technical working group with the Ministry of Lands and Forestry as the lead agency to resolve user-conflicts and harmonise land resource use among competing users.
(h) Organise public for a whenever it is desired that all stakeholders and land agencies contribute to decisions aimed at resolving land use priorities and incompatible competing end-uses.

***5.5 Developing Effective Institutional Capacity and Capability***

(a) Restructure, and strengthen land administration agencies to enhance their capacity to deal effectively and efficiently with land administration delivery.
(b) Establish inter-ministerial and interagency co-operation to co-ordinate land-use policies, plans, and programmes, identify land policy priorities and resolve policy ambiguity or conflicts.
(c) Establish and maintain the Geospatial framework Data-base in Survey Department and require all thematic databases to be referenced thereto.
(d) Establish and develop land information system and network among related l and agencies in the country and link them up with sub-regional and regional networks.
(e) Encourage international co-operations and support in all aspects of land policy, land administration and sustainable development.
(f) Implement human development programmes in each of the land sector institutions to improve capability in policy decision-making and analysis, planning and programming, monitoring, evaluation and co-ordination of land agency performance and effective use of databases, information systems and networks.
(g) Establish the necessary mechanism for enhancing active collaboration with the traditional authorities and all land stake holders to educate all traditional landowners on the need to keep proper land records, conserve land for sustainable use, avoid protracted land disputes, litigation and conflicts, as well as involve them in making decisions affecting the allocation, disposal, management and development of their own lands.
(h) Review and consolidate all land legislation into a comprehensive legal code, and provide transparent guidelines and procedures to give effect to this policy and facilitate land administration delivery.
(i) Educate, on systematic and continuous basis, the public on the new Land Policy and all measures instituted to achieve policy objectives.

***5.6 Revision of the Policy Document***

The provision of this policy document and the legislations derived therefrom will be reviewed and adjusted periodically, to reflect emerging realities and land administration challenges as and when necessary.